Research Report 1493

Alternative Environments for Army Recruiting, 1987-2001

Volume 3

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U.S. Army
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This three-volume report illustrates the application of the concepts and techniques of futures research to national security planning. Its focus is on the outlook for Army recruiting over the next 15 years, given the various ways that the external social, technological, economic, political, and military environment may evolve in this period, nationally and internationally. In Volume 1, four scenarios are presented that incorporate hundreds of original forecasts derived through use of an advanced version of the Delphi method. Three of the scenarios represent alternatives to the "most likely" future, which is presented in detail. The results provide a unique foundation for identifying and evaluating policy options for Army recruiting, and guidelines for such a policy analysis are included, along with extensive discussion of the rational for this approach to planning. Volume 2 presents a variety of graphs depicting possible future changes. Volume 3 contains the appendixes.

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Manpower and Personnel

FOREWORD

The Manpower and Personnel Policy Research Group of the Army Research Institute for the Behavioral and Social Sciences conducts multidisciplinary research on recruiting issues of significance to the U.S. Army. Using state-of-the-art futures methodology, this report provides scenarios describing four distinct recruiting environments that will be useful when developing policy options affecting Army recruiting.

Conducting research to assist the Army in meeting its annual accession requirements is an essential part of ARI's Manpower and Personnel Policy Research Group, Manpower and Personnel Research Laboratory. This work was requested by Deputy Chief of Staff for Personnel (DCSPER) in April 1985 and was completed by Benton International under Contract DAAG60-86-13-0393. Results of this effort were briefed to Chief, Program Analysis and Evaluation, U.S. Army Recruiting Command, on 17 April 1987.

This report is designed to assist Army decisionmakers in developing the resources and skills for successful recruiting in the years ahead.

EDGAR M. JOHNSON
Technical Director

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We are grateful as well for the guidance provided by Drs. Paul Gade, Curtis Gilroy, and Newell Kent Eaton of ARI; LTC Jerome Adams (retired), formerly at the U.S. Army Military Academy; Major Robert Colligan, then of the U.S. Army Recruiting Command (USAREC); and LTC Terry White of the U.S. Army Office of the Deputy Chief of Staff for Personnel (ODCSPER).

We especially wish to thank the dozens of persons--officers, enlisted men, and civilians from each of the USAREC Brigades, as well as from the Department of Defense and academia--who voluntarily served on the Delphi panel. It is customary to thank these individuals, of course, because the quality of a study like this depends crucially on their willingness to deal responsibly with questions that have no "right" answers and to share freely their experiences, convictions, hopes, and hunches. Our debt to the respondents in this Delphi is so great, however, that it is difficult to express adequately our gratitude for their contributions. The questionnaires were complex and demanding, and between the first and final rounds we asked the panelists to complete a special questionnaire on the motives of recruits. In most cases, the respondents gave far more generously of their time than we asked--or could have hoped. They met the challenge; their participation was extraordinary.

Wayne I. Boucher
James L. Morrison

ALTERNATIVE ENVIRONMENTS FOR ARMY RECRUITING, 1987-2001

VOLUME 3

EXECUTIVE SUMMARY

Requirement:

To improve Army recruitment policy analysis and planning by showing how futures research can be used to develop policy-relevant scenarios of alternative future environments. Environmental analysis is not new, nor is the use of the concepts and techniques of futures research for this purpose. What is new is the introduction of this approach into military planning. In effect, this report provides a case study, focused on Army recruiting, which shows not only how radically futures research differs from conventional approaches, but also how the results can provide a superior basis for identifying and evaluating future policy options.

Procedure:

The authors have applied advanced techniques of futures research to define four alternative environments for Army recruiting. These techniques include special versions of the literature search, polling, the Delphi technique, cross-impact analysis, and scenario-writing. To help ensure the widest possible use of this report, these methods and their rationale are often discussed at length, as are the concepts of "futures research" and the "most likely" future.

Findings:

The "most likely" future suggests that none of the major negative environmental discontinuities forecasted in this study will occur by the year 2000, although the course of developments in this period will almost certainly produce crises and confusion for those in the recruitment system who have not bothered to forecast the environment. Many problems, some of them already well known, will undercut USAREC's effectiveness. Nevertheless, USAREC will manage to achieve its recruitment mission. In the three alternative futures, various developments--most of them negative--severely challenge USAREC's ability to meet its mission at various points during the period of interest. In most cases, these developments are far beyond USAREC's direct control. Accordingly, the need is for careful environmental monitoring, occasional formal updates of the "most likely" scenario, and, where appropriate, the advance preparation of policies and plans to deal with these contingencies if they should actually begin to materialize.

Utilization of Findings:

This research has been presented to the U.S. Army Recruiting Command (USAREC) to enhance its ability to prepare for environmental changes which may lie ahead to the year 2001 in areas relevant to Army recruiting.

ALTERNATIVE ENVIRONMENTS FOR ARMY RECRUITING, 1987-2001

VOLUME 3

CONTENTS

ALTERNATIVE ENVIRONMENTS FOR ARMY RECRUITING, 1987-2001

VOLUME 3

INTRODUCTION

Volume 3 contains Appendixes A through F. Appendix A describes the general conceptual structure used in this study and illustrates the results from the literature search undertaken early in the work based on this structure. Appendix B presents detailed results from a special analysis completed during this project to evaluate and forecast the significance of a large set of possible motives that recruits might have for enlisting in the Army. Although most of the findings on individual motives are incorporated in the "most likely" scenario, the discussion offered in this appendix should be of particular interest to those seriously concerned about the question of how possible shifts in motivations may affect Army recruitment. Appendix C provides a brief introduction to the nature of scenarios and scenario-writing. It argues that, contrary to the belief of many analysts and managers, there are a great many kinds of scenarios, and it explains where the scenarios in this report fall along the spectrum of possibilities. Appendix D addresses the issue of whether there is any correlation between objective and subjective descriptions of the background and outlook of individual Delphi respondents and their forecasting behavior. The analysis, which is exploratory, may serve as a further indication of the elusiveness of the answer. Appendix E describes and presents the cross-impact model used to generate the alternative futures. Finally, Appendix F provides a serial list of the events and trends forecasted in the Delphi study. Because all of these items are included in the "most likely" scenario, each is keyed to the page on which it is first discussed in this scenario.

Appendix A

THE LITERATURE SEARCH

A major step taken early in this study to identify the trends and events to be included in the Delphi portion of the research effort involved scanning prior publications. As indicated in Chapter 2, the coverage was broad.

To manage the data, a taxonomy was developed. Its purpose was two-fold: first, to provide a comprehensive set of categories within which related materials could be filed, and, second, to provide a numbering method for every piece of information collected, as well as for the specific trends and events identified (or created) within these categories for use in the Delphi. This scheme is presented in Figure A1.

Fig A1
TAXONOMY USED IN THE LITERATURE SEARCH

CATEGORY OF DEVELOPMENT	BEARING ON ARMY RECRUITING			
	EXTERNAL			INTERNAL
	International	National	Regional	
1. Demographic	1.1	1.2	1.3	1.4
2. Social	2.1	2.2	2.3	2.4
3. Technological	3.1	3.2	3.3	3.4
4. Economic	4.1	4.2	4.3	4.4
5. Political, Legal, and Regulatory	5.1	5.2	5.3	5.4
6. Environmental	6.1	6.2	6.3	6.4
7. Military (in General)	7.1	7.2	7.3	7.4
8. U.S. Army	8.1	8.2	8.3	8.4

All of the information and other findings from the literature search that were judged relevant by the authors were first assigned to unique categories in this taxonomy. For instance, an important discussion of global population growth would be assigned to Category 1.1. while a review of racial tensions that could affect Army recruiting would be assigned to Category 1.4.

Because the focus of this study was the future environment, or context, for Army recruiting, the literature search looked carefully for any materials that might help to define that environment. Excerpts from papers, reports, and books were compiled. To distinguish among the various kinds of things that were addressed in these excerpts, the authors assigned a third digit to the category number, using the following code:

1 = A trend that might be worth tracking.

2 = An event that the author of the source document had identified as having some chance of occurring in the future and which might have an important bearing on developments pertinent to Army recruiting if, in fact, it did occur over the next 15 years.

3 = A policy proposal or suggestion offered in the source document as a means of improving some condition, current or prospective.

4 = A miscellaneous piece of information, not one of the preceding types, but nevertheless of potential value in the Delphi or in later work.

Finally, a two-digit item number was assigned in serial order (00-99) to each excerpt entered into the taxonomy. Thus, the item coded "5.2.1.04" could be identified as the fourth trend in the data base that concerned a specific political, legislative, or regulatory development on the national level. (In this case, the item numbered 5.2.1.04 concerned the future stability and predictability of the U. S. defense budget.)

In the Delphi study and in the preparation of the scenarios, an attempt was made to use the same numbering scheme to code the trends and events actually forecasted, except that the digit indicating whether the item was a trend or event was dropped, because that fact was immediately apparent in the data. Thus, every trend and event has a four-digit number, the first two specifying a cell in the taxonomy, the last two signifying the item number. In principle, therefore, this structure makes it easy to retrieve the source document, if any, from which the trend or event was drawn.

In reality, however, because the literature search and the Delphi design proceeded in parallel, as did the development of numbering systems for each, time prevented keying every trend or event back to its source in this way. That is, the final two digits in the event or trend numbers do not always match the corresponding sources in the literature search. Nevertheless, the category numbers (i.e., the first two digits) are almost always the same, so that it is not particularly difficult to locate the source document.

Note that this structure provides a means of managing as many as 12,672 excerpts (or entire documents, for that matter)–i.e., as many as 99 items of any of four types in any of 32 categories. The literature search undertaken in this project hardly tapped this potential, though it involved reviewing several hundred source documents. Nevertheless, the files created were rather large.

The following pages present a small sample of the material gathered. This will illustrate both the taxonomy and the range of materials scanned. Readers who wish to compare the "most likely" scenario (or the alternative futures) to this material will find some direct links. Sometimes there are also striking differences or similarities, as suggested in Chapter 2.

A bibliography concludes this appendix. It lists many of the works consulted during the literature search.

Section 1--Demographic Trends and Events

1.1.1.01(1) "Baby bust"

The US News & World Report (December 16,1985) reports that the "Baby bust" phenomenon is even more severe in Europe than in U. S. West Germany has lowest rate in Europe, 1.3 children per woman, significantly below the 2.1 children per woman replacement rate. "Population decline due to low fertility is a new phenomenon--unlike previous declines due to catastrophic events such as the Thirty Years' War or the Black Death in medieval Europe." "Fertility decline started around 1965 almost simultaneously in every country and took everybody by surprise."

The population of the Western World in relation to the rest of the World is going down:

Western Population as a Percent of World Population

Time	Percentage
1945	25%
1985	14%
2050	8-11%

Ben Wattenberg, Senior Fellow at the American Enterprise Institute, is quoted as saying, "There is a relationship between the size of a population and its power in the world. Belgium is not going to build a 747 airplane. Luxembourg is not going to have a Star Wars system. The only countries to launch aircraft carriers recently are the U.S. and the U.S.S.R., because it takes an enormous population base to pay the taxes to provide the money for these inordinately expensive weapons and technologies."

Family allowances in Europe have had little effect on birth rates.

1.2.1.01(1) Graying of America

According to Suzman and Riley, there has been rapid growth in the "oldest old." Numbering less than a million in 1960, there are now 2.6 million Americans age 85 or over, or 1% of the population; this proportion is projected to increase to 1.9% by the year 2000 and 5.2% by 2050. The oldest of the old is the most rapidly growing group in the US population. They have striking differences from other Americans: a unique sex ratio (only 44 males per 100 females in 1980), higher rates of institutionalization, and lower family income. (May 24, 1985)

This group is increasingly politically active; is conservative; and will increasingly demand public monies for medical and other welfare needs, thereby decreasing the available pot for other public agencies, e.g., military, education.

1.2.1.01(2) Graying of America

Love (1985) gives the following statistics regarding the age composition

of the U.S. population:

U.S. Population
Overall Age Composition in Millions of People

AGE	1970	1980	1990
0-14	58	51	55
15-29	50	62	57
30-44	35	44	60
45-64	42	44	46
65/plus	20	26	32 (p. 1)

The implications for Army recruiting are clear: In the 15-29 age group,there will simply be fewer potential recruits. This age group will not only be smaller as a percentage of the U.S. population in the future but will also be smaller in actual numbers.

1.2.1.02(1) Increased Legal Immigration

Love (1985) says that legal immigration is expected to increase at a rate of 5 percent per year during the period 1985-1990 (p.4). He gives the following figures on legal immigration:

LEGAL EMIGRATION FROM SELECTED COUNTRIES TO THE UNITED STATES

	1970	1980	1985	1990
India	10,114	22,607	24,964	35,000
Korea	9,314	32,320	33,042	47,000
Philippines	31,203	42,316	42,768	62,000
Cuba	16,334	15,054	10,599	11,000
Taiwan	14,093	27,651	no info	34,000
Vietnam	1,450	43,483	37,236	32,000
Mexico	44,469	56,680	57,557	105,000

(p.4)

1.2.1.03(1) Increased Illegal Immigration

Love (1985) says, "Illegal immigration will continue to increase at a high rate. Continued economic hardship in Mexico, and political turbulence in Central America will cause a surge of illegal immigrants by 1990" (p 4).

The total number of illegal immigrants between 1985 and 1990 is projected to be from 20 to 30 million people (p. 4).

1.2.1.04(1) Baby Bust

The Kiplinger Washington Letter says that total births are up from the lows of the 1970's because so many "baby boomers" are having babies themselves. Baby boomers (21-39 years old) now make up one-third of US

population. But in the 1990's, the number of women of childbearing age will be down. In 1955-65, 42 million children were born; in 1972-82, 33 million children were born (May 24,1985).

Some consequences of the lower birth rate according to the Kiplinger Washington Letter are:

1. Fewer young people hunting for first jobs, leading to lower unemployment
2. Fewer people buying their first home
3. Possible return to military draft
4. Armed forces in 2000 with more nonwhites and nonblacks
5. Increased immigration quotas
6. Pressure on Social Security system

1.2.1.04(2) Baby Bust

Quester and Lockman (1984) suggest that the birth dearth may be overstated. They acknowledge the the number of males aged 17 to 21 is going down. But, they say, "some forget that at the trough there will still be as many young males as there were in 1966. After 1993, the numbers will begin to grow again, because the sheer size of the post war baby boom resulted in large numbers of child-bearing age in the 1970s. On average they had fewer children, but there were more of them" (p.2)

1.2.1.04(3) "Baby bust"

A "Baby bust/birth dearth" is looming. The current rate is 1.8 children per US woman, 52 percent below the "Baby boom" and lower than the 2.1 replacement rate required to maintain the current population. (US News and World Report[USN&WR] December 16, 1985).

US News and World Report gives several reasons to explain the "baby bust":

1. Changing social mores with 2 million unmarried couples living together
2. Legalized abortion
3. Advances in contraception
4. More working women. In 1985 more than 70 percent of women of childbearing age work--up from 40 percent in 1955.

The same article gives these suggestions to increase birth rate:

1. Parental leave
2. Increased tax exemption for each child
3. Increased tax credits for child care
4. Ease immigration restrictions
5. Federally funded day care

1.2.1.04(4) Baby Bust

A report by the American College Testing Program (ACT) details the decline in the number of high school graduates to the year 2000. Some key findings of the report are:

1. "The number of high school graduates in every state and region will continue to decline until 1987, when there will be a slight recovery before figures plunge to new lows from 1990 to 1994" (p. 1).

2. "The low point for number of graduates nationally is projected for 1992, when there will be a drop of 22 percent below the record high levels of 1981" (p. 1).

3. "The decline in graduates nation-wide is expected to show some recovery beginning in 1994 to 2000..." (p. 1).

The report predicts a very uneven growth picture:

Region and Selected States	Change From 1981 by 1999
Northeast	down 30 percent
District of Columbia	down 51 percent
Northcentral	down 22 percent
Southeast/Southcentral	up 3 percent
Texas	up 49 percent
Florida	up 20 percent
West up 19 percent	
Alaska	up 65 percent
Utah	up 76 percent (p. 1)

The report lists eight states with high birth rates and expected heavy in-migration:

Alaska
Arizona
Florida
Georgia
Nevada
Oklahoma
Texas
Wyoming(p. 1).

1.2.1.05(1) Asian-American Population

An article in the Durham Morning Herald (October 26, 1985) says that the US Asian population is booming and is now the fastest part of the US

population. The following figures were given to show the tremendous growth in the Asian-American population and the trend for the future:

Year	Asian-American Percentage of US Population
1900	.03
1950	.04
1960	.05
1970	.07
1980	1.50
1985	2.00
2000 (est.)	4.00

Year	Numbers of Asian-Americans
1980	3.5 million
1985	5.1 million
2000 (est.)	9.9 million

Group	Population Growth 1970-1980
Total US Population	11%
Asian-American Population	141%

Two reasons are given in the article for this growth:

1. Liberalized immigration policies in 1968
2. Refugees from Indochina in 1975

The article says that overall Asian-Americans are better educated, occupy higher rungs on the occupational ladder and earn more than the general population.

1.2.1.05(2) Asian-American Population

Hodgkinson (1985) has developed the following statistics on Asian-Americans:

1. 60% of Asian-Americans are foreign-born, yet the average Japanese-American speaks English as his/her native language, while almost no Indochinese do.

2. Almost 30% of Asian-Americans arrive in the US with four years of college already completed--39% of all Asian-American adults are college graduates.

3. Their SAT verbal scores are far below white averages; their math SAT scores are equally far above whites.

4. Because of increased Indochinese immigration, language problems among Asian-American youth will increase.

5. Asian-American youth are heavily enrolled in public schools; a high percentage graduate and attend college (Although access is widespread, hiring and discrimination against Asian-Americans is also common).

6. Because of their competence in math and the physical sciences, Asian-Americans represent a disproportionate share of minority students at many of the highest rated universities (p. 7).

Hodgkinson (1985) also notes that Asian-Americans make up 7.7% of doctoral students in the US, but only 1.5% of the total US population (p. 7)

1.2.1.05(3) Asian American Population

According to Ladies' Home Journal (1986), Asian Americans made up more than one-third of the total immigrants to the United States during the period 1960 to 1980 (p. 134). Totals for immigrant groups were given as follows:

Population Group	Percentage of Total Immigrants
Asians	33 (or more)
Mexicans	20
Other Latin Americans	17
Europeans	12
Not given	18(or less)(p. 134)

The magazine also described the remarkable educational achievement of Asian Americans. It states, "This year, for the first time, the top five winners of the prestigious Westinghouse Science Talent Search were all of Asian background, and four of them were immigrants" (p. 134).

The article says that the percentage of the total population who are immigrants is now 7.5 percent, down from 8.8 percent in 1940 (p. 134).

1.2.1.06(1) Growth of minorities

Hodgkinson (1985) says that minority populations are growing faster than majority populations and that "'minority majorities'" are possible in the next decade in the public schools of ten states. By the year 2000, 1 in 3 US citizens will be nonwhite (p. 7).

1.2.1.07(1) Declining Metropolitan Growth

According to Holdrich (1984), the proportion of Americans living in

metro areas declined from 76% in 1970 to 75.3% in 1980, and is expected to decline further to 74.8% by the year 2000. The decline in their relative share of population has been even more pronounced for larger metro areas with more than 250,000 population, which declined from 67% of Americans in 1970 to 65.8% in 1980, with a projected decline to 65% by 2000. The fastest growing metro areas are expected to be Olympia, Washington (2.5% per year), Provo, Utah (2.3%), and College Station, Texas, and Ft. Myers, Florida (both 2.2%). The slowest growing areas will be Utica, New York (-.07%), New York City (-.03%), and Jersey City, (0.00%) (pp. 32-37).

1.2.2.01(1) U.S. Baby Boomlet

According to Alina Tugend (1985, p. 1), for the first time in 13 years, total enrollment in the nation's private and public schools is expected to increase this fall. The rise in total enrollment, which will reach 44.68 million (up slightly form 44.63 million last year), will reverse a steady downward trend that began in 1971, according to the National Center for Education Statistics. The enrollment increase will occur primarily at the nursery school and kindergarten levels. This increase is due to the "baby boomlet" of offspring born to members of the post-World II "baby boom" (Tugend, 1985, p. 29). This increase in pre-primary and early elementary school enrollment presages a new trend that will affect elementary and secondary school enrollment until the early 1990's. This new wave of pupils will then have a positive effect upon enrollment at the secondary level for the several years beginning in the early 1990's. Tugend notes (1985, p. 29) that college enrollment will suffer only modest declines over the next decade, due in part to the increased attendance by nontraditional students.

Army recruiters will want to note the increase in population provided by the baby boomlet which will come of recruiting age in the early years of the twenty-first century.

1.2.4.01(1) Information on Hispanic recruits

Sahai (1984) gives the following as highlights of his literature search on the recruitment of Hispanics:

"One Navy study shows that even though Hispanics had lower aptitude and motivational scores; on the average, they tended to do as well as other Service members on performance measures. Authors recommend that Navy can select Hispanics for technical training whose chances of remaining on the job are quite good.

Hispanic recruits have deficiency in the verbal English comprehension skills necessary to complete recruit training. A high percentage of recruits fail English language comprenhension test.

The number one problem facing second language soldiers (specifically Hispanics) is their inability to function in the English language. Cultural differences also constitute an important barrier to successful adjustment to Army life.

Those not adequately proficient in English tend to get poor AFQT scores and are, consequently, placed in combat and non-technical MOSes.

The use of Spanish surnames as a means of identifying Hispanics presents some thorny problems. In some areas, Spanish surname recognition includes a high proportion of persons who do not meet other criteria, such as Latin-American birth or ancestry.

One Navy study investigating the relationship between religious orientation, beliefs in the occult and supernatural, and locus of control of Hispanic and mainstream Navy recruits found that:

-Beliefs in the occult and external locus of control are positively correlated.

-Beliefs in the occult and theistic externality are negatively correlated.

-Theistic externality and religiosity are positively correlated.

-Both theistic externality and religiosity are uncorrelated with locus of control.

One study shows that the Navy is recruiting Hispanics who do not differ in terms of locus of control from mainstream Navy recruits.

The results of a Verbal Skill Curriculum program administered to a group of Hispanics (mainly Puerto Ricans), with deficiencies in English Language listening and speaking, show that the language skills were greatly improved though there were significant increases in costs. The attrition rate was significantly lower for recruits participating in the program.

A study of acceptability of culture, specifically immigrant behavior, involving Hispanic and mainstream Navy recruits, showed that both groups have a marked preference for biculturalism on the part of immigrants, though Hispanics are more in favor of using only their language.

One Air Force study describes that several attempts by the military to take a census of its ethnic population have met with frustrating disappointment.

One study attempting to examine the low rate of commissioning of Army officers, compared to the proportion of their enrollment in ROTC, comes to the conclusion that cultural and linguistic problems lead to high attrition and decreased competitiveness of Hispanic cadets, which in turn result in reduced Hispanic officer production.

One study undertaken to understand and predict the development of certain bicultural characteristics found that subjects whose historical development pattern reflected more experience with Mexican-American and mainstream Anglo cultures were more flexible in leadership, more bicognitive, and scored higher on multicultural participation.

The major finding of a study examining the Navy's recruiting process was: Only one out of five potential Hispanic recruits are enlisted in the Navy. The major barriers to enlistment are inadequate academic preparation and language skills and to a lesser degree, intense family attachment, Puerto Rican nationalism, and inadequate time allowed to make career decisions.

One study examining the salient values of Hispanic and mainstream Navy recruits found that Hispanic Navy recruits are unrepresentative of the Hispanic population. For most Hispanics, the most important reason for joining the Navy is economic.

An anthropological study of a San Diego, California, Hispanic barrio found that the barrio can be a source of recruitment, provided adequate attention is paid to understanding of the sociocultural factors relevant to the members of these groups.

A study investigating the nature of work related values of Hispanic recruits found that the mainstream and Hispanic recruits who join the Navy are generally similar in the their work values and modernity, although mainstream recruits tend to be somewhat higher on socioeconomic status.

One study examines the problems that Hispanics face during Navy recruiting because of English language deficiencies. Hispanics have lower aptitude scores and more difficulties in recruit training than other recruits. The have a higher attrition rate and more difficulty with academic tests. The Navy needs an 'English as a Second Language' training program; lowered attrition would pay for the program.

Hispanics are allocentric, i.e., they pay much attention to the needs, goals, values, and points of view of others, while mainstream subjects exhibit more idiocentric behavior, that is their social behavior is largely determined by their personal goals, attitudes and values.

A study investigating the differences in the social attitudes of Hispanics and mainstream Navy recruits found that the stereotype of Hispanics as more religious is not supported by the data.

A study showed that Navy recruiting policies favor enlistment of high quality Hispanic recruits. Some Hispanics with high needs for achievement perceive the Navy as a place to obtain the training that may help them to better their socioeconomic status.

A study on moderately acculturated and bicultural Hispanic recruits indicated that they enjoy both Spanish and English TV, movies, musical programs, and neighborhoods, and have some mainstream friends and romantic partners. Highly acculturated Hispanics indicate that they enjoy mostly English TV and movies, have many mainstream friends, neighbors, and romantic partners, and enjoy mostly English musical programs.

A study by the Navy showed that there are no differences between Hispanic and mainstream Navy recruits in terms of values linked to nature, being, present time orientation, lineality, collectivesm, individuality, uncertainty

avoidance, and level of educational aspiration. However, there are subtle differences. The mainstream recruits emphasize individualistic values--honest, conservative, moderate, while Hispanics emphasize interpersonal values--to be sensitive, "simpatico", loyal, dutiful, gracious, and conforming.

A study by the Navy indicated that Hispanic and mainstream Navy recruits do not differ much in relation to preferred attributions of causality for achievement-related events. Both groups show a self serving bias, i.e., they took more responsibility for their successes than for their failures. They also attribute their failure to a lack of effort than a lack of ability.

A study concerning similarities and differences between Hispanic and mainstream Navy recruits on familism found that both Hispanic and mainstream recruits are equally willing to make a sacrifice in order to be present in a crisis situation with the family, although Hispanics extend this willingness to celebrations with both extended and nuclear family.

A study investigating the cultural script, known as 'simpatia', among Hispanic and mainstream recruits found'that Hispanics expect more positive behavior in positive social situations and deemphasize the appropriateness of negative behavior in situations of conflict. Thus, they want to receive compliments if they do a good job and even mild expression of criticism might be seen as extreme.

A comparison of samples of Navy members to worldwide norms found that Navy samples are extremely high in Power Distance, Uncertainity Avoidance and Masculinity, and close to the U.S. mean (i.e., high) on individualism. There are differences between Hispanic and mainstream respondents in Power Distance, Uncertainity Avoidance, and Collectivism. However, contrary to expectations, mainstream members were higher on Masculinity. Hispanics tend to give more weight to interpersonal relationships than do mainstream members.

A study by the Navy found that Hispanic recruits differ from the kinds of Hispanics described in the literature. Hispanic Navy recruits have a more positive autostereotype and view the mainstream more favorably than other Hispanics as reported in the literature. A comparison of different groups (white, black, Puerto Rican, Cuban, Mexican-Americans, and Chicanos) showed clear evidence of ethnocentric bias, that is, each group saw itself as 'very good' and the other group as only 'good.'

A study by the Navy found that mainstream Navy recruits experience a strong pull toward work roles and push out of the family; Hispanics, by constrast, experience ambivalence toward work roles and strong pull toward family. Hispanics see more hostility, contempt, and giving and taking of orders in work roles than is the case for mainstreams. Hispanics would prefer a more supportive work environment involving less competition and more cooperation" (pp. 18-21).

1.3.1.01(1) Growth of the Sun Belt

US News and World Report says that the Sunbelt accounted for 91 percent of American's population growth in the past 5 years. The total US population in July, 1985 was put at 239 million (USN&WR, 13 Jan 86).

1.3.1.02(1) Strength of the Eastern US

Hodgkinson (1985) suggests that the strength of the US in terms of population is in the East. He gives the following numbers to support his argument:

Time Zone	Percent of 1985 US population
Eastern	50.0%
Central	30.0%
Mountain	05.0%
West	14.5%

(p. 7)

Section 2--Social Trends and Events

2.1.1.03(1) Increased Numbers of Foreign Students in US Colleges

Hodgkinson (1985) writes that in US graduate engineering programs, 43% of the students are foreign students. 36% of all math and computer science graduate students are foreign students (p. 8).

2.1.1.08(1) European Youth Become More Conservative

U.S. News and World Report (May 26, 1986), says that European youth are becoming more conservative. The magazine sees several "potential benefits for the United States":

Smaller anti-American demonstrations
Short-lived ill will after actions such as the Libya bombing by U.S. planes
Reduction in opposition to U.S.-initiated moves such as basing cruise missiles in Europe
An increase in desire for graduate study in the U.S.

2.2.1.03(1) Increased Patriotism

Oxford Analytical (1984), a British research firm examining the American society, has concluded that "patriotism is in. The President is never happier than when he invokes it, and no one wishes to be upstaged by him in the "'more patriotic than thou'" contest (p. 137).

2.2.1.03(2) Increased Patriotism

Broyles (1986) reviews many of the stories of betrayal in American society: Insider trading on Wall Street; spy after spy case, including one involving an FBI agent; and one involving one of our closest allies, the Israelis. But Broyles says that even so he "kept running into examples of betrayal's opposite: Loyalty. The problem was that most of those stories didn't make the news" (p. 13).

Broyles then reviews several examples of loyalty, including the Vietnam-veterans parade in Chicago. Although 200,000 veterans showed up to march (150,000 more than expected), most of the news media did not give much coverage to the event. Broyles concludes that the parade is a "reminder that betrayal and selfishness aren't the only stories in America today" (p. 13).

2.2.1.04(1) Increased AIDS

U.S. News and World Report [USN&WR] (June 2, 1986) states that "Acquired-immune-deficiency syndrome, since first reported in the U.S. in 1981, has each year doubled its number of new victims" (p. 54).

USN&WR reports that while the largest group infected by AIDS is made up

of sexually active gay men, intravenous drug users make up 17 percent of AIDS victims and blood-transfusion recipients, two percent (p. 54). Heterosexual contacted cases make up only about one percent of all cases (p. 55).

AIDS has no known cure and its lethality is seen in that of its 20,000 American victims, over 10,000 are already dead (p. 57).

AIDS has a number of negative consequences for the Army. First, there is a diversion of resources for AIDS testing. Second, there is probably a lingering fear in recruits' minds about the safety of blood that might be needed in a combat situation. Third, there will be a very small but growing number of recruits who will be medically disqualified because of the disease.

2.2.1.05(1) Decreased Family Stability

Decreased stability in the home, academic pressures, and an uncertain economy are pushing many college students to the breaking point. According to a Chicago Tribune report, college counselors indicate increasing incidents of depression, stress, and suicide threats. According to John Romano, student development head at the University of Minnesota (Chicago Tribune, 1985), "people don't seem to have the luxury of just going to school anymore." In support of this is cited the facts that most General College students carry a full academic schedule while working at least 20 hours a week, and some are married and have children as well. Added responsibilities result in added stress.

Implications of these findings may result in increasing numbers of 18 year olds who cannot afford the luxury of college study. The Army may become increasingly attractive to some, especially if they begin to address the increasing needs of this cohort group.

2.2.1.05(2) Decreased Family Stability

Predicting the future of the family in the year 2000, Cherlin and Furstenberg (1983) see the family as an institution that still retains strength, yet the "traditional" family will no longer predominate. By 2000, three kinds of families will mark the personal lives of most Americans: families of first marriages, single-parent families, and families of remarriages. Cohabitation has become widely accepted, and is likely to be more common in the future--but as a precursor to marriage, rather than an alternative (p. 7-14).

2.2.1.06(1) Breakup of the Black Family Structure

In a New York Times article, Cummings (1983) reviews information on the status of the black family unit for the past several decades. In 1960, 21% of black families with children were headed by women, in contrast to 6% of white families. In 1982, 47% of black families were headed by women and 55% of black babies are now born to unmarried mothers. Many experts now agree that the situation has reached such proportions that it threatens to undo the black economic gains of the past three decades. The underlying cause of the increase in black families headed by women is the sharp increase in the

joblessness of black men. Another reason for more black children in single-parent families is the high degree of teen-age pregnancies among blacks. Conservatives argue that government programs have undermined the nuclear family structure. But liberals counter that without the existing social and income supports, flawed as they are, the situation would be much worse (p. P1).

2.2.1.07(1) Increased Numbers of Teenage Mothers

Hodgkinson (1985) says that a "white teenage female in the US is twice as likely to give birth outside of marriage as in any other nation studied. . . . It appears that sexual activity among the young is no more frequent here than elsewhere; the major difference is the inability of American youth to get access to information about contraception" (p.3-5).

2.2.1.07(2) Increased Numbers of Teenage Mothers

According to Murray (1985), the single most important element of the poverty problem is poor single young women, often in their teens, who have babies and keep them. In 1965, there were about 155,000 13 year olds who were children of single mothers. In 1975, there were 240,000 of these new adolescents, and in 1985 there were about 394,000. In 1995, there will be about 700,000. These children of single mothers tend to have abnormally high incidences of mental and physical handicaps and bad employment records. They make schools hard to learn in and neighborhoods difficult in which to live. Murray cites proposals that include: child allowances to two parent families, bribes to women who haven't had a baby in the previous year, facilities for children, welfare age discrimination, encouraging father's responsibility, workfare for mothers, and advertising campaigns against young unmarried motherhood. Curiously, no mention is made of training programs, day care, and public service for youth (p. 27-34).

2.2.1.09(1) Continued Experimentation and Use of Illegal Drugs by Young People

The following chart in U.S. News and World Report (1986) shows that the percentage of college students who used drugs at least once during the year has dropped or leveled off since 1980.

	1980	1985
Marijuana	51%	42%
Cocaine	17%	17%
Stimulants	22%	22%
Tranquilizers	7%	4%
Opiates	5%	2%
Methaqualone	7%	1%
Barbituates	3%	1%
Alcohol	91%	92% (p. 61)

Taylor (1986) says the illegal drug sales now "total $100 billion

annually, more than the total net sales of General Motors, more than American farmers take in from all crops" (p.48). Cocaine-related deaths double from 1981 to 1985. Moreover, drugs are now cheaper and have greater purity, which lead to higher rates of addiction and drug-related deaths.

2.2.1.10(1) Billingual Education

Wells (1986) discusses one aspect of bilingual education--that of English speakers learning another language. Wells reports that foreign language studies among youngsters is growing with at least 1,200 programs for students under 6.

Increased language training could have a positive impact on Army recruiting. As students learn more about a language, there would likely be a desire to travel, which, in turn, would increase the propensity to enlist.

2.2.1.10(2) Bilingual Education

Sahai (1984) says that "ninety percent of U.S. Hispanics speak Spanish. Barely a majority speak just enough English to get by" (p. 5).

2.2.1.14(1) High School Dropout Rate

In a February 13, 1985, Chicago Tribune article, recent estimates were reported of the number of students who are failing to graduate in the Chicago public schools, and further, the many who receive diplomas, yet cannot read at an expected level of competency. According to a new study by Design for Change, a children's advocacy organization, of the 39,500 students who entered a Chicago public school in the fall of 1980, only 18,500 were graduated in 1984. Of those who did graduate, only 6,000 were able to read at grade level, while 5,000 others had only 8th grade reading skills or less. In a worse example, at one of Chicago's segregated, nonselective high schools, only 9,500 students of the entering 25,500 entering 9th graders, graduated four years later, with only 2,000 of them reading on a 12th grade level.

Although these represent the most bleak of Chicago's educational statistics, it is noted that only 33 percent of Chicago seniors score at grade level or better in reading, and 19 percent score lower than 8th grade level. Scores remain lower, at 20 percent of the national average, at the segregated schools, with an additional 41 percent having less than a junior high reading level.

The Tribune article notes the critical situation where high school drop outs will become a life long burden to the welfare system.

2.2.1.14(2) High School Drop Out Rate

In contrast to Hodgkinson (1985), U.S. News and World Report quotes Department of Education figures to show that since 1980 the dropout rate has DECLINED, from 28.1 percent to 25.9 percent in 1984. This is direct contradiction with Hodgkinson's claim that the dropout was increasing during

the same period, due to higher standards for competency exams, more rigorous curriculum, and other reasons.

It is clear that the Army must have accurate figures on the high school dropout rate if accurate projections are to made for Army recruiting. In absence of other documentation, it is suggested that we use the figures from the Department of Education.

2.2.1.14(3) High School Drop Out Rate

According to a report published by the Committee for Economic Development (1985), US employers are finding that many high school graduates are virtually unemployable, even at today's minimum wage. Nearly 13% of all 17 year olds still enrolled in school are functionally illiterate, and 44% are marginally illiterate. One-fourth of US youth never finish high school. In contrast, nearly 100% of Japanese students complete high school--and they study and learn more than their American counterparts.

2.2.1.20(1) Women in the Workplace

Hodgkinson (1985) states that 70% of "'working age'" women are in the work force, and that "'latch key children'" are growing and now number 4 million children (p. 5).

2.2.1.20(2) Women in the Workplace

USA Today reported in its June 17th issue that 48% of those polled said that the trend of more women working outside the home is a good thing. However, there was great variation depending on age:

Age Working Women	Percent Approving
18-34	60
35-54	47
55-64	36
65 and over	28 (p. 1A)

2.2.1.21(1) Changing Television Audience

Bower (1985) reports the results of the three studies of the US viewing public: Steiner's 1960 study, Bower's 1970 replication, and his second replication in 1980. Several basic findings remain essentially unchanged: the less educated like TV better, and blacks--even well educated blacks--like the medium more than whites and watch somewhat more overall (possibly vicarious participation in aspects of society from which they have been excluded). On the other hand, the following changes were noted in the 1960-1980 period: 1) a clear and consistent increase in viewing time by about 27%; 2) the proportion of programs found to be "very enjoyable" increased from 44% to 54%; 3) the proportion of the population that thought TV gave them the most complete news coverage tripled; 4) despite enjoying more programs, general attitudes toward TV drifted from high enthusiasm to

modest appreciation, perhaps as the novelty effect wore off. The proportion of the public who thought that children were better off with TV than without it was 70% in 1960, 76% in 1970, and 62% in 1980.

TV, as an Army recruiting device, will want to keep abreast of the continuing trends of TV viewing. Marketing through the media will be a significant variable in Army recruitment.

2.2.1.22(1) Youth are Maturing Later

Woodward and Kornaber (1985) report that as the life expectancy of Americans has increased, so has preparation for adulthood. In a society that is taking longer to grow old, the young are taking longer to grow up. In matters of emotional development--abilities to set goals, postpone gratification, take responsibility for others--today's students are significantly less mature than their parents and grandparents were at the same age. Serious college study requires motivation, self-discipline, enthusiasm for learning, and a capacity for sustained attention; most 18 year olds lack this maturity. It is time to change our institutions to fit the real needs of the young. One way to do so would be through a year or two of mandatory public service in the military, domestic volunteer programs, or overseas programs. This would help adolescents to grow up by working cooperatively for others, learning self-management, and becoming involved with people of other classes and backgrounds. Colleges could then become places of intellectual excitement, rather than expensive preserves for the young (p. A31).

2.2.1.23(1) Increased Disabilities in Newborns

Lyons (1983) says that about 140,000 babies born in 1983 (4% of births) will suffer from physical abnormalities, mental retardation, or learning problems, in contrast to about 70,000 per year born in the late 1950's. The origins of this development are not clear: possible causes include increased cigarette smoking among women of childbearing age, increased exposure to toxic substances in the workplace, and improved medical techniques permitting more people with disabilities to survive and pass congenital problems along. Although total school enrollments are declining, there has been a 15% increase in the number of US schoolchildren enrolled in some form of special education since 1975 (p.1).

An implication for Army recruiting is that there will be more competition for public monies in the future.

2.2.1.24(1) The Quality of the Public School System

Solorzano, Collins, Galligan, Hawkins, and Peterson (1986) warn that America is facing severe problems with its school system (p. 52). They give several specific areas of concern:

1. The greatest teacher shortage in 20 years and the need to replace half of the current teachers by 1992. Over the next six years, the shortfall is expected to reach over 300,000.

2. The quality of instruction in writing and critical-thinking skills is "dangerously low."

3. The U.S. continues to score lower than other industrialized nations in math and science.

4. "...inadequate training and poor working conditions...are hurting the classroom and keeping many top students from pursuing teaching as a career" (p. 52)

The authors state that the Carnegie Report on Education says that the way to deal with teacher shortage is not to deal with it as we did in the past--by lowering standards--but by making the teaching profession more attractive to prospective teachers.

Still, there are some bright spots:

1. The National Assessment of Educational Progress says that students in 1984 were better readers than they were in 1971.

2. SAT scores rose nine points last year returning to the 1975 level.

3. The Gallup Poll reports that 43 percent of the public graded their local schools with an A or B, the highest since 1975 (pp. 56-7).

The quality of the public schools has a direct bearing on the Army. With lower quality in the schools, the Army will have to divert more of its resources to remedial education for recruits. One key measure for the Army to monitor will be SAT scores. This will give an overall picture of the quality of education. However, other reports and studies, such as ASVAB scores, will also be important.

2.2.1.26(1) Young People's Attitude Toward Sex

According to U.S. News and World Report[USN&WR] (June 2, 1986), "America's affair with casual sex, that two-decade adventure launched by the Pill, is giving way to a time of caution and commitment"(p. 53). USN&WR gives two reasons for the change:

1. A greater appreciation of traditional values.

2. A growing fear of the health risks of casual sex.

One authority, Dr. James Haughton, public-health director in Houston is quoted as saying the "'the fear of AIDS, herpes and other STD's has done more to change habits than has 100 years of preaching'" (p. 54).

Sexually transmitted diseases (STD, the acronym that has replaced VD) are on the increase--now at 12 million cases per year, up from 4 million in 1980.

Health authorities are not advocating celibicy, but are recommending that young people take more caution with sex. They advise "practicing hygiene, limiting partners and knowing more about them" (p. 54).

The consequence of this trend toward a more conservative attitude toward sex has several positive spinoffs for the Army. First, the number of STD cases in soldiers could be curbed if the trend continues. Second, the number of unplanned pregnancies and abortions and their related down-time could be reduced. Third, fewer recruits will be medically unfit if the conservative trend becomes dominant.

2.3.1.01(1) Regional Distribution of Hispanics

Sahai (1984) shows that Hispanics are concentrated in two states--Texas and California:

Percentage of Persons of Spanish Origin in the United States, 1980

California	31%
Texas	20%
New York	11%
Arizona, Colorado, & New Mexico	9%
Florida	6%
Illinois	4%
Rest of the U.S.	18%

Section 3--Technological Trends and Events

3.1.2.01(1) Japan's Fifth Generation Computer Project

According to Malik (1983), the Japanese will seek to humanize computing--turning it into an almost plain language technology, through the building of two specific systems in the next 8 to 10 years. In the 1990's, the Japanese also plan to have systems with 100 to 1000 times the power of a Cray or a CDC 205 (currently the most powerful systems) (p. 205-210).

3.2.1.01(1) Increased Use of Videodiscs

Dworkin (1986) describes the current state of videodiscs. In short, he says that the videodisc is a technology with great possibilities but that cost might be a factor in limiting its use. However, he quotes a consulting firm's figures to show that U.S. public schools now have 7,000 videodisc machines up from 2,000 last year (p. 62).

Apple Computer, the National Geographic Society, and Lucasfilm, Ltd. (the "Star Wars" people) are developing interactive, educational videodiscs.

Such developments bode well for improving the quality of education and increasing the probability that new recruits coming into the Army may be more familiar with, and less fearful of, high tech equipment.

3.2.1.03(1) Decreased size of Computers

Worthy (1983) says that a new wave of computers will revolutionize the way we work away from the office. The original "portable" was a 24 pound machine brought to market in 1981 by Osborne Computer. The new machines weigh far less than half as much and come in two distinct sizes: briefcase size for those weighing around 10 pounds, and book size for those weighing 4 pounds or less. Sales of these computers are expected to swell from 90,000 units in 1983 to over 1.5 million units in 1988 (p. 97-100).

3.2.1.05(1) Increased Use of Computers

The 1985 Statistical Abstract of the United States reports that shipments of personal computers increased from 246,000 to 4,500,000 during the five year period from 1979 through 1983. The current volume of Predicasts Forcasts reports that personal computer sales will increase to 10 million units by 1987 and that sales of office automation software alone will reach $27 billion by 1990.

3.2.1.06(1) Automation Displaces Workers

According to the 1986 issue of Predicasts Forecasts, industrial robots will result in the displacement of 473,000 manufacturing employees by 1995. For example, 10% of aerospace industry workers and 15% of electronics manufacturing workers will be displaced. It may be wise for Army recruitment

policies to focus their efforts toward industries prone to automation by robots.

Similarly, David Howell (1985), indicates that industrial robots will cause job displacement 4.5 to 6.2 times greater than the number of new jobs that technology will create. Net job loss could be as great as 718,000 positions. Employment will decline in low-skill blue-collar fields and increase in highly skilled white-collar fields.

3.2.1.07(1) New Technology for the Disabled

Lazzaro (1986) discusses that computers and other new technology are having a major impact on the disabled. Equipment such as speech synthesizers, voice recognizers, and braille printers is making it possible for the physically disabled to function in the workplace. The physically handicapped can now gain complete control over computer systems. As this technology improves, the impact of physical disabilities are substantially lessened. Although a "wildcard" policy of enlisting the disabled would fly in the face of the tradition of every person having a secondary mission of fighting as infantry, such a policy may bew necessary in the future.

3.2.1.09(1) Increased Advertising Technology

Bogart (1985) says that between 1967 and 1982, the number of ads disseminated doubled. It is expected that the total number of ads will again double by the year 1997. The proliferation of advertising messages in the past 25 years reflects growth in the number of advertised products and services, growth in the number of publications and broadcast stations, and a shift from 60 second commercials to 30 second commercials on TV. Most agency executives expect the 15 second commercial to become the standard television advertising unit within the next eight years. According to consensus of 250 senior advertising and marketing executives, new media such as videotex and VCRs will by 1995 cut at least 10% from the time people spend with present communications media. By 1997, there will be twice as many specialized media vehicles as there are today, aimed at narrowly defined markets; the major network share of the prime-time TV audience will be less than half of its present 78%. By 1997, the experts think that ten international super-agencies will place 25% of all ad agency billings worldwide. Bogart concludes optomistically, that advertising will grow with an eternally expanding market for consumer goods (p. 21-28).

According to Kroger (1986), computers are altering the way we live. Their number and their power are increasing dramatically. Computers with artificial intelligence will make life easier and more productive. Besides creating a more productive future, computers are part of a tremendous knowledge explosion--the amount of scientific and technical knowledge is now increasing by approximately 13% per year, and computer skills will be necessary for 75% of all American jobs by 1990.

3.2.1.11(1) Public School Use of Computers

Public school students are enjoying increasing exposure to the computer. Some statistics include:

Percentage of public schools using at least one microcomputer for instructional purposes (Education Week, 1985).

1981	1982	1983	1984
18.2	30.0	68.4	85.1

Number of microcomputers used for instruction in public schools according to Statistical Abstract of the United States (1985).

1982	1984	1990
101,982	570,000	3,000,000

Despite the high percentage of public schools reporting instructional use of micros, other statistics indicate only a fraction of all students are actually using computers. In 1982-83, only 16% of elementary students and 13% of secondary students received hands on training (Statistical Abstract of the United States, 1985).

3.2.2.01(1) New Advances in Telecommunications

Slate and Popko (1986) indicate that the next five years hold unprecedented opportunities for the communications industry. Deregulation is encouraging innovation and competition. The need for communication between computer facilities is creating increased demand for digitized telecommunications networks.

New developments are expected include the integration of office automation with voice equipment and the development of shared lines for voice and data. The next five years will see the establishment of standardized international protocals. This standardization will lead to simplified switching and the development of "gateways" to connect systems. Major cities will be linked by high-capacity, high-speed fiber-optic networks and satellite systems. Electronic mail, electronic publishing, and video telephones will become well-established. These and other telecommunications services will find a ready market in the growing number of homes which contain personal computers.

This technology will allow for easy sharing of information among Army installations and offices thus making possible greater coordination of recruiting efforts and,hopefully, effectiveness. It is also possible that interviews and educational programs will be able to be transmitted by Army recruiters directly into the homes of prospective recruits via personal computer systems. Additionally, the Army will be able to share personnel files with other recruiting offices, and log a host of other activities. Any

recruiting activity that involves the sharing of information is potentially affected by new developments in telecommunications technology.

3.2.2.01(2) New Advances in Telecommunications

Miller (1985) predicts that the solution to transmitting the mass of heterogeneous information which needs to be shared will ultimately be solved by the development of an integrated services digital network (ISDN). This network will make it possible to simultaneously send and receive independent voice, data, and images over a single communications line. An ISDN will result in global standardization, access integration, service integration, and expanded services. However, such a network connot be created without the cooperation of network owners, business, government, and other organizations.

IDSN has the potential for profoundly affecting Army communications and with corresponding implications for the kinds of personnel the Army will need to recruit to function in this environment.

3.2.2.02(1) Medical Breakthroughs

Edwards (1986) reports the possibilities of two new treatment approaches to cure Alzheimer's disease and Down's syndrome. It is estimated that 2 million Americans suffer from Alzheimer's disease and another 250,000 from Down's syndrome. It is now known that these two diseases involve strikingly similar anatomical, functional, and neurochemical abnormalities of the brain. These common abnormalities are centered in the hippocampus and may be due to too much trophic factor.

Although probabilities of exacting a cure are not mentioned in this article, the control or cure of these mental disorders will allow a new group of functioning adults to enter the workforce. More significantly, any research into the way the brain functions and into the the discovery of interventions to improve those functions has potential application to every industry, and the Army in particular.

According to an article in Fortune (1986), it is most likely that a memory pill will be available in approximately five years. As a result of research on Alzheimer's disease, scientists believe that deterioration of the cholinergic pathways of the brain and resulting memory loss are due to a shortage of the neurotransmitter acetylcholine. Experimental drug treatment has improved the memories of aged rats, mice, and monkeys and increased the short-term memory of rhesus monkeys. A successful memory drug for humans would have an annual market of over 1 billion dollars.

Development of a memory pill would not only help those who suffer from degenerative brain diseases such as Alzheimer's but would also aid in improving the short-term memory of normal adults. Memory pills could be used for instructional activities, and also for on the job training. Use of such drugs will need to be carefully monitored for negative health impacts and to determine the long range benefits.

3.2.2.03(1) Cure Found for Heart Disease

Heart disease, the number one cause of death in the United States, kills over 900,000 persons annually (Statistical Abstract of the United States, 1985, p. 74). Although no probability of pending cure is given, Silberner (1986) reports that Philippe Frossard and his colleagues of California Biotechnology, Inc. have already identified 24 genetic markers associated with atherosclerosis. Frossard and his colleagues, in a search for predictive genetic markers, have categorized both high-risk and protective indicators of heart disease. According to Frossard (as found in Silberner, 1986, p. 58), "in about two years we should have a battery of markers that should be sufficient to prediction."

The cure for heart disease would be an additional factor in the continuing increase in the rate of life expectancy. A higher life expectancy would have significant implications for personnel departments. There may be increased pressure for higher retirement ages, thus reducing the number of those entering the workforce for the first time. Additionally, there may be some need to modify existing pension plans and benefits, which would be of interest to potential Army recruits.

Section 4--Economic Trends and Events

4.1.1.01(1) Continued Low Dollar in Relation to Other Currencies

Zanker (1986) says that "the dollar has fallen in vallue by 31 percent" in the past 16 months. Because of the continued high trade deficit and the high debt by the federal deficit, the business community, and the American public, other economists feel that the value of the dollar will drop even farther.

4.1.1.04(1) Widening U.S. Trade Deficit

Hillkirk (1986) reports that the U.S. is losing ground in the arena of world trade. Specifically, Asian nations are trouncing the American economy on the world market. The 1985 merchandise trade deficit exceeded $140 billion, a figure that dwarfs the 1975 figure of $1.8 billion.

Deep concern abounds over the U.S.'s ability to compete, especially against the Japanese. Electronics, for example, our nation's largest manufacturing industry, is sliding against foreign markets. It will be essential for the U.S. to take the lead in computers, the "life blood" of the information age. Experts agreee that the U.S. must quickly shift its efforts from the declining European powers, to those nations composing the Pacific Rim. Hope lies in the U.S.'s assets of education and entreprenurialism. Competition will be in "brain power" over "man power" in the coming years. To counter the Japanese and others, the U.S. must be ready to compete over the long haul.

4.1.1.05(1) U.S. Business in World Competition

Cetron and Port (1985) write that the U.S. industrial colossus has been the envy of the world for most of this century, but America has been losing its edge in manufacturing for the past three decades. By 2000, industry will offer jobs to only 8% of the U.S. labor force (one-third of the present figure). The juggernaut of technology gives no hint of slowing down, and industry will be swept into an era of automation. The magnitude of the looming unemployment and retraining problems will galvanize a national program after the Democrats regain the White House. The work week will be limited to 24 hours, and the retraining effort will center on local schools, where buildings will be in use 16 or more hours a day. America's leadership in technological innovation will carry the day, if we don't give away too much technology too fast. American technology has been compared to a leaky bucket, and the crucial challenges are to keep the bucket full, and to give U.S. companies more incentives to turn new technology into products. The only sure way to stay ahead is to run faster than everyone else. Policies to help the U.S. compete include modifying the tax laws to foster capital formation and long-term investment, changing antitrust provisions in some industries, incentives to encourage entrepreneurship, and a new accommodation between labor and management.

4.1.1.06(1) Growing U.S. Debt

Drobnick (1984) reports that by the end of 1985, the U.S. will probably become the world's largest net user of foreign savings as a result of foreign deposits in U.S. banks, purchase of U.S. stocks and bonds, and direct investments in factories and real estate. The dangers in this situation are that the large trade deficits accompanying America's capital importer status result in a high loss of profits and jobs in trade-sensitive U.S. industries. The flow of investment capital to the U.S. will retard economic growth and job formation in Europe and the LDCs, probably initiating a vicious circle of political instability and more capital flight to the U.S.. By becoming a debtor, the U.S. is mortgaging its future. At some point there will be flight from dollars by foreign and domestic investors, requiring a steep depreciation, a rise in interest rates, or exchange controls.

4.1.1.07(1) Gap between Rich and Poor Countries

Seligson (1984) notes that debate continues over whether a gap will widen or narrow between the rich and poor countries of the world. The per capita income gap between low income and industrialized countries grew from $3,677 to $9,648 between 1950 and 1980, and an ever-widening gap separates the rich from the poor within the developing nations themselves. But other evidence suggests that middle-income countries may be gaining on the rich countries, and that growth with equity has occurred in a number of developing nations that have committed themselves to such a policy.

4.1.2.03(1) Sharp Decline in U.S. Dollar

Garten (1985) states that the U.S. economy has become a house of cards, with the dollar as the most wobbly part. The strong U.S. dollar has accelerated America's switch from the world's manufacturing and mining hub to a center of banking, software, and insurance. But a major drop in the value of the dollar is not inconceivable. A steep decline would scare foreigners who hold our currency and may cause a rout. Since we badly need foreign money to plug our budget and trade deficits, Washington would be forced to push up interest rates. Then the dollar might stabilize, but we would watch our housing industry crumble and other investments dry up, and we would then be in a depression. America should be giving currency concerns the same high priority they receive in other industrialized countries. Instead we have a President who, in a version of Rambo economics, takes great pride in watching our currency soar.

4.2.1.01(1) General Unemployment Remains Down

U.S. News and World Report (June 16, 1986) gives some statistics from the National Planning Association (NPA) showing job expansion in America to the year 2000. According to the NPA, there will be a growth of 26.1 million new jobs by the year 2000 with a total 140.1 million jobs in the U.S.. While many of these jobs will be in the South and the West, Boston was listed behind Los Angeles as the number two city in gaining new jobs .

For the near term, Mervosh (1986) says that services can generate growth. He says that "75 percent of total employment now is in services inluding law, medicine, government, journalism, banking and insurance". He also gives these figures on jobs for May, 1986:

Area	Number of Jobs
Services	up 200,000
Manufacturing	down 40,000
Oil and gas	down 30,000

Overall, the unemployment rate in May rose to 7.3 percent, up form 7.1 percent in April.

4.2.1.01(2) General Unemployment Continues Down

A report by the Bureau of Labor Statistics indicated that the number of unemployed Americans reached a new low during the Reagan presidency of 6.7% civilian unemployment. Total Americans on the job increased to almost 109 million. This rate is a drop from the 1985 average unemployment rate of 7.1%. According to White House spokesman, Larry Speaks, "More jobs and less unemployment is the best kind of economic news" (Raleigh News and Observer, 1986, p. 6A). Several private economists have forecasted economic growth in 1986 to a 4% annual rate, in contrast to the 2.3% rate of 1985.

February, however, brought a jump in unemployment to 7.3%, the largest one month gain in six years, according to the Labor Department. Two-thirds of the 700,000 person increase in unemployment occurred in the three states of California, Texas, and Illinois, with one fourth of those affected being hispanic. Speculations relate the increases to losses in agricultural jobs and those related to the oil industry (Chapel Hill Newspaper, 1986, p. 2A).

4.2.1.01(3) General Unemployment Continues Down

Hosek, Fernandez, and Grissmer (1984) predict a continued economic recovery and low unemployment over the next few years. They believe that the "declining unemployment rates that we assume should make enlistment and retention goals harder to achieve, other things equal, but a new rise in unemployment could reverse this trend" (p. 4).

4.2.1.04(1) Price of Domestic Oil Remains Low

Experts forcast that continued low oil prices will help to revive the economy. It is hoped that this prolonged decline in crude sold to the U.S. will result in lower oil bills paid by American consumers and businesses, thus giving them more money to spend in other areas. It is also expected that inflation will be reduced, another indicator of advancement in economic growth. The Reagan administration predicts that economic growth for 1986 will be raised to a rate of 4 percent (Fayetteville Times, 1986, p. 12D).

4.2.1.05(1) Cost of Single Family Housing Stays High

U.S. News and World Report (1986), gives the following as median prices of new single family homes:

Year	Price
1981	68,900
1982	69,300
1983	75.900
1984	79,900
1985	84,300
1986(first quarter)	88,000 (p. 35)

The consequence of this to the Army is that as housing costs go up, on base housing becomes an increasingly important benefit to prospective recruits.

4.2.1.08(1) Rising Federal Deficit

The National deficit for the first three months of the 1985 fiscal year totaled $75.13 billion, which is 5% ahead of the previous year. This decrease is expected, in part, to be from a surge in tax payments, according to the Treasury Department (New York Times, 1986, p. 42).

4.2.1.09(1) *Over-educated Increasingly Unemployed*

Going to college does not necessarily insure one of a good job, according to Luther Otto, Director of Career Development at Boystown Center in Nebraska (1985, p. 13). It is estimated that there are between 20 and 25% of workers who are over-educated and underemployed. Computing, for example, is cited throughout literature as the area for job expansion. However,1990 projections predict that the nation will need only 150,000 new computer programers, as opposed to 600,000 new building custodians, and 200,000 computer analysts in comparison to 800,000 fast-food workers and kitchen helpers. College education as vocational preparation is expected to decrease such that by the end of the 1980's, one fourth of all college graduates will be over-qualified. Opportunities abound for the Army to provide on the job vocational training that will secure employment for the youth of the twenty-first century.

4.2.1.10(1) Increasing Women's Earnings

Quinn (1986) reports that women are presently earning 69 cents for every dollar earned by men, on the average. As women are acquiring more training, however, their wages are increasing. It is significant that women with the same skills, education, and expertise as men are earning much closer to a man's wage, and this gap is narrowing, especially in young age groups. Women in the 20 to 24 age bracket earned 86 % of the male wage in 1983--an increase of 8% since 1980. This percentage is up further from the 1970's when women

were only earning approximately 74% of a man's earnings, due to a large number of untrained women entering the workforce.

Women today are entering into higher paying vocations than in previous years. The female labor force grew by 1.2 million in 1984, with two thirds entering fields traditionally held by men. While discrimination still exists, women are increasingly getting equal pay for equal work. Today's job market is also gradually adapting to special needs of the working mother. Part-time jobs, flexible work schedules, flexible benefits, and child-care assistance are all beginning to find their way into the workplace, and will become increasingly important issues for employers in their recruiting (p. 20).

4.2.1.11(1) Growth in Personal Income

American's personal income has risen steadily for the past several years. The annual income rate of $3.294 trillion for 1985 is a 5.9% increase from 1984, and 1984 an increase of 9.7% from 1983. Consumer spending has increased as well, from $2.423 trillion in 1984 to $2.582 trillion in 1985. According to Alan Murray (1986), the rise in personal income was the largest in almost two years, and the spending increase, the largest in greater than ten years.

4.2.1.12(1) Shrinking of the Middle Class

Pear (1983) cites two economists at the Urban Institute who report that, over the past five years, income distribution has become less equal. Average disposable income among the poorest one-fifth of families declined by 9.4%, while declining only 0.5% among the richest one-fifth of families. In a second study, a Baltimore economist estimated that 55% of the population fell within an intermediate income level range in 1978, but by 1983 this figure was only 42%. Census Bureau officials also point to data showing a steadily more unequal distribution of family income. Reasons for these changes include: a declining proportion of middle-income jobs, welfare benefits not keeping pace with inflation, increasing tax burdens for poor people, and a significant increase in divorces, which may cause drastic decreases in family income.

Thurow (1986) indicates that the decline of the middle class is in part a result of the U.S.'s deteriorating trade performance in the world market

4.2.1.13(1) Federal Budget Increases in Defense Dollars

Newsweek (1986) reports increases in budgeted federal dollars for defense, with particular note to the future. It is expected that defense allocations will increase 11.7% in 1987 and 45% in 1991 to a high of $113.6 billion. Implications for the Army could include significantly increased funds for recruiting efforts.

4.2.1.14(1) A Changing Workplace

Collins (1985) writes that another change in the workplace is an increasing number of corporations offering the benefit of child care to its

workers. A new study by The Conference Board found more than 1,800 companies providing some form of child care assistance to workers, up from only 600 in 1982. An estimated 120 companies and 400 hospitals and public agencies sponsor day-care centers at or near their facilities. Some companies provide child care information and referral services to their employees , after-school care, or nursing services for sick children so their parents can work. About 30 companies have undertaken to train and license family day-care providers who care for children in their homes. Many companies provide direct financial assistance to employees through a variety of programs including vouchers, discounts with local centers, child-care option in a benefit program, and reduction of taxable income to establish tax-free child-care accounts. Corporate child-care programs are most commonly found among high-tech companies, banks, insurance companies, and hospitals.

4.2.1.14(2) A Changing Workplace

The U.S. News & World Report (January 28, 1985) says that after gaining some initial acceptance in the 1960's, the expansion of extended-leave programs stalled. But the concept of job absences for a month to a year in spreading again, especially in newer companies. Today, about 1 in every 10 companies has some form of sabbatical. At McDonald's, for example, the leave consists of an eight-week period at full pay for every 10 years of full-time service. Employers who offer sabbaticals say that the expense is small compared with the improved productivity, creativity, and morale that they get in return. But some consultants caution that employees can lose touch with their work during sabbaticals, or that time off can be used to explore other employment opportunities.

4.2.1.14(3) A Changing Workplace

Naisbitt and Aburdene (1985) assert that the corporation is an analogue for the rest of society. We are re-inventing education, health care, politics, and virtually all social structures. But the corporation is often the quickest and most responsive to change, because customers vote every day. According the the authors, the following are trends forcing the reinvention of the corporation at this time: (1) the shift in strategic resource to an information society; (2) the coming seller's market and the new competition for the best employees; (3) the "whittling away" of middle management; (4) the entrepreneurial revolution; (5) the new variegated workforce that is younger, better educated, and increasingly female; (6) the demographic revolution of more working women; (7) the growing use of intuition and vision as management tools; (8) the mismatch between the education system and the needs of the new information society; (9) the rising importance of corporate health issues; and (10) the values of the baby boomers (self-reliance, social liberalism, health-consciousness), who will account for 54% of all workers by 1990.

The authors announce that, "The aim of the book is not just to inform but to inspire." They do so by asserting that, (1) "Work should be fun" is an emerging value, (2) human capital is the most important resource of a re-invented company, (3) we are moving to full employment as the new economy

creates millions of new jobs, (4) the best and brightest people will gravitate toward corporations that foster personal growth, (5) creativity and individuality will be "treasures" in the new corporation, and (6) people are aching to make a commitment and only need the freedom and environment in which to do so. They conclude that re-invented corporations will become "the Fortunate 500," measured not by the numbers but by the quality of life. These companies will attract the best employees, which will assure their survival into the next century.

4.2.1.14(4) A Changing Workplace

Drucker (1985) holds that the organization of the future is rapidly becoming reality, with a structure in which information serves as an axis. The information-based structure is relatively flat, requiring fewer levels of management than before. These levels are not levels of authority, but relays for information, similar to the boosters on a telephone cable which collect, amplify, repackage, and send on information. This new structure makes irrelevant the famous principle of the span of control, replacing it with a new principle of "span of communications." The information-based structure permits and indeed requires far more "soloists" with far more specializations. The conventional business organization was originally modeled after the military; the information-based system more closely resembles the symphony orchestra(i.e., all instruments play the same score, but each plays a different part; they play together, but rarely in unison). Unlike the orchestra, the score in business is being written as it is being played, which requires high self-discipline, management by objectives, and strong decisive leadership (p. 32).

4.2.1.15(1) Poverty Among Hispanics

Sahai (1984) says that there is a trend of an increasing percentage of Hispanics below the poverty level and of an widening gap between the percentage of Hispanic households below the poverty level and non-Hispanic households below the poverty level

Percentage of Families Below the Poverty Level

Year	Spanish Origin	Not of Spanish Origin
1970	15%	11%
1980	20%	14%
1983	23%	15%

(p. 13)

This gap is also seen in the difference in median family income:

	Median Family Income in 1982	
Total Spanish Origin	16, 228	
Puerto Rican	11, 148	
Mexican Origin	16, 399	
Cuban Origin	18, 883	
Other Spanish Origin	19, 069	
Not of Spanish Origin	23, 907	(p. 12)

4.2.1.16(1) Increase in Entrepreneurialism

Wayne (1984) writes that America's economic engine has always been thrust forward by the efforts of entrepreneurs. Today, there is a new breed: young, well-schooled, and well-financed. Business incorporations in 1983 reached a record 600,000, and a record 8 million people are now self-employed. Nearly 160 business schools now offer courses in entrepreneurship, up from 16 in 1970. Forces behind the new entrepreneurs include: changing technology in computers and communications, cut in capital gains tax rates, and the baby boom generation joining the workforce (p. F1).

4.2.1.17(1) Wages for Young People

Tan and Ward (1985) predict that wages for new high school graduates will go up in relation to mature workers as shown below:

Projected Percentage Increase in 1980 Wages (Adjusted for Inflation)

Year	Young High School Grads	Peak Earners	
1990	17%	7%	
1995	30%	14%	(p. v)

Tan and Ward also state that the "implications of these results for the military are that declines in cohort size will raise the future cost of attracting new recruits" (p. vi). They say that the reason that wages for the young high school graduate will go up is because the size of the youth cohort will go down in the near future (p. 12).

However, they test two hypotheses that would tend to reduce the wages of the young male high school graduate: (1) the decline of ability of the high school graduate and (2) increased female participation in the labor force (p. 22). They assume that as the level of educational attainment goes higher, those who have only a high school education will have lower abilities. Yet, their statistics show that this will not result in lower wages for the youth cohort (p. 22-34). Similarly, a rise in the number of women in the labor force is tested to see if it depresses the wages of the young male high school graduate. Again, their statistics show that even if the number of females in the labor force increases, the projected rise in these wages will not be

lessened (pp. 34-38).

4.2.2.01(1) National Lottery to Reduce Taxation

According to Farney (1986), increasing numbers of states' alternatives to greater taxation is state gambling through lotteries. These lotteries have been responsible for generating between two and four percent in revenues to eliminate deficits in state budgets. In 1984, seventeen states and the District of Columbia reported a net of $2.9 billion. Typical lotteries, like that of Missouri, pay back the public 45 cents on each dollar gambled, and are seen by many as much more pleasurable than required taxation. Technology is now being employed to make this legal form of gambling more attractive to the public, such as the use of a player-activated gambling terminal, similar to the bank automated teller machine. Critics of the lottery system, however, voice their disdain at government support of potentially destructive behavior.

The popularity of lotteries and their substantial revenue to states indicated that a national lottery could become a reality in the near future. While Farney makes no actual predictions, he does state that seven national lottery bills now stand before Congress. One proposal, by Rep. Cardiss Collins of IL., supports the sale of a new class of savings bonds, as lottery tickets, from which proceeds would benefit many social agencies. A 1984 Gallup Poll indicated that 62% of Americans favor a national lottery.

State lottery proceeds or those from a prospective national lottery would serve to balance state budgets and help to narrow the national deficit. Lottery revenues might serve to prevent the increase in "across the board" taxation, thus allowing a surplus of personal income. Additionally, a national lottery may free up monies for army recruiting purposes (p. 42).

4.2.2.02(1) Females Lose Out to Males in War for Equitable Wages

According to U.S. News and World Report (1985), the notion that women should be paid the same for jobs of comparable value is losing ground. Cited are examples from the courts of Washington, Florida, Illinois, North Carolina, and Texas in 1985. The author indicates that women will have difficulty winning court cases in Illinois and California in 1986. It is unlikely that women's salaries will reach the same scale as men. This factor may continue to increase the attractiveness of military service for women.

4.2.2.03(1) Closing of Jobs in "Smokestack" Industries

Ingrassia and Levin (1986) note that the auto industry is headed for permanent plant closings that would greatly exceed the well-publicized shut-downs of the early 1980's. While imports are expected to rise, 6 to 10 U.S. plants could shut down for good between this year and the early 1990's. Every assembly plant that closes during the next five years will also affect factories that produce components ranging from seats to bumpers to pistons, a problem that could cost thousands of people their jobs. By the early 1990's, 16% of plant closings are forecasted.

With potential job loss in the thousands, Army recruiters have an additional population from which to draw. It is conceivable that the Army might focus on young men and women who might have aptitude for jobs in industries related to automobile production (p. 37).

4.2.2.04(1) "High Tech" Job Availability

"The number one job category for the next decade, with growth forecast at 97 percent, is that of computer service-technician, says the U.S. Department of Labor, which adds that computer programmer jobs are expected to grow by 77 percent." (Durham Morning Herald, 1985)

4.2.2.05(1) Labor Shortages

Samuel Dunn, in his article "What the 90's Labor Shortages Will Mean to You" (1985), first affirms the reality of critical labor shortages for the next 25 years in most American business and industry. He goes further to indicate that even factors of automation, immigration, the changing family structure, and more women in the workforce will not eliminate the coming labor crunch.

Solutions that Dunn cites to head off the shortage include: opening up jobs beyond sex, age, experience, or educational criteria, recruiting from within, national recruiting, better pay and benefits, and most importantly that managers must analyze their situation and make some long range (at least ten years) plans.

Recruitment is going to be the critical problem of the 90's. Not only attracting employees, but also keeping them satisfied in their career is mentioned.

4.2.2.08(1) Return to Depression

According to Moffitt (1985) we are no longer threatened by hyperinflation, but we now face the opposite danger of deflation--a severe and protracted decline in the price level. One can see all the warning signs that were largely ignored in the 1920's: an agricultural crisis, weak commodity prices, serious credit problems at large banks, and severe international economic equilibrium. Far from stimulating a worldwide economic boom, U.S. policy has led to a fragile recovery based precariously on continued economic expansion in the U.S.. As long as the present cyclical expansion continues, the deflationary threat may be contained and inflation may even rise. But when the next, predictable downturn of the business cycle comes, it may be nearly impossible to keep the bottom from falling out of the economy. Without a fundamental change in the outlook of our policymakers--and perhaps even in spite of one--a terrible economic disaster awaits.

4.2.2.08(2) Return to Depression

Harrington (1985) says that the 1920's represented the triumph of supply-sided economics, new scientific discoveries radically transforming the

production process, booming business investment, a dramatic rise in the dividend and interest portion of U.S. income, a proliferation of corporate mergers, labor on the defensive, and productivity outstripping buying power. This is not to say that a second crash is at hand, but the echoes are there. Sooner or later the exceedingly modest consumption capacity of the low wage service sector, where 80% of new jobs have been generated, won't be able to buy the output of laborless, computer-controlled machines. We should not liquidate the heritage of Franklin D. Roosevelt on the eye of its renewed relevance. This heritage does not offer an answer to our crisis, but the point of departure for solutions that must go as far beyond the New Deal as the New Deal went beyond Herbert Hoover.

4.2.2.08(3) Return to Depression

Forrester (1985) reports that the Kondratieff cycle or economic long wave with peaks of 45-60 years apart is the phenomenon responsible for the great depressions of the 1830's, the 1890's, and the 1930's. Present worldwide economic crosscurrents suggest that we are entering another such downturn of the long wave. Throughout the economy, there have been replays of what went on before the 1930's. Defaults, unmanageable debt on agricultural land, and inflation turning into deflation are all part of working out the imbalances that have accumulated by the peak of long-wave expansion of production capacity. If the U.S. deficit is not brought under control, it will rapidly get out of hand, with no solution available except for the U.S. to default on its debt. If we had an awareness of the economic long wave through use of the System Dynamics National Model, we could have prevented some of the overshoot from which we must now recover (pp. 16-20).

4.2.2.09(1) Liquidation of U.S. Assets

Beilenson and Poole (1985) argue that one way to balance the Federal budget would be to follow the example of many corporations and sell off assets. The U.S. government owns sufficient assets, grossly undervalued at present, to pay off most or all of the $1.5 trillion national debt. It owns one-third of all U.S. land and a vast treasure-trove of mineral resources. The majority of these landholdings is already in commercial use as timber or grazing land, and only about 10% is in parks. Where certain types of use are deemed important, they can be assured by deed restrictions.

The elimination of the U.S. federal deficit would give the U.S. a clear starting place in world affairs. Although this article does not give any indication of the likelihood of this event, a smaller national debt would seem to decrease the possibility of large military cuts.

4.2.2.10(1) Career Prospects for the Next Decade

The U.S. Department of Labor has forecasted job prospects to the year 1995 (The New York Times, 1984, p. 8). Top gainers in the 1982-1995 period include increases in computer-systems analysts by 85%, electrical engineers by 65%, health-service administrators by 58%, registered nurses by 49%, guards by

47%, accountants and auditors by 40%, and lawyers and physicians by 34% each. Top losers in the same period involve decreases in postal clerks by -18%, college and university teachers by -15%, and stenographers by -7%, and increases in both typists and bookkeepers by only 16% each.

In addition to the knowlege of the growth and decline of certain job prospects, it will be necessary to note that careers will be lengthened as we approach the next century. According to Jarold Kieffer, former Deputy Commissioner of Social Security (1984, p. D1), by the year 2000, many people will want or need to continue working to age 70, or even 75 and beyond. A 1981 Harris poll found that most working Americans in all age groups do not look forward to retiring. And this is fortunate, for the burdens on the Social Security system will rise drastically after the year 2000 if people retire at the ages that workers do today. Longer work lives would keep people paying Social Security payroll taxes, while delaying the time at which workers claim benefits. Leaders in both the private and the public sector should act quickly to tap the social and financial dividends that could accrue to the nation from longer work lives (p. D1).

It is questionable whether later retirement will keep younger people out of the work force. The answer to that issue will depend upon whether it is possible to preserve existing jobs while creating new ones that are cost effective.

4.2.2.11(1) National System for Youth Service Instituted

Bresnick (1983) reports that teenagers tend to be at the end of the line when individuals are considered for employment. As general unemployment has increased in the U.S., the shortcomings of the mechanisms for helping youth make the transition to the world of work have become more apparent (p. 37-39).

According to Foley, Maneker, and Schwartz (1984), educators, military manpower experts, employment specialists, and various policymakers have all called for the creation of a voluntary system of national service to help mold youth for the real world. A new policy should encompass the positive aspects of existing programs, and add new elements to complement, expand, and better focus these efforts. The system should be made voluntary, which will bring more enthusiastic and devoted participation, support democratic ideals, and cost less.

America's youth seem receptive. In a 1979 Gallup poll, 77% of those polled between the ages of 18 and 24 favored a system of voluntary national service, and 35% said they were interested in volunteering. A level of participation involving about a quarter of all youth should be making a noticeable impact on society (Foley, et al, 1984). The Army could capitalize on this volunteer spirit of American youth, and utilize such a national service plan as part of their recruitment strategy.

4.2.2.13(1) The Death of Mining

Business Week (1984) reports that in 1980, metals mining in America was an $8.9 billion enterprise; by 1983, it had shrunk to $5.9 billion. Mining employment has declined from 109,000 in 1981 to 45,000 in early 1984, and could fall a further 30% in the next 2 to 3 years. The mining industry is hobbled by a worldwide excess capacity that shows no signs of abating. Despite disappointing demand, Third World countries, eager to exploit their natural resources, keep opening giant new mines that incorporate the latest recovery techniques. Another broad-based U.S. recession in 1985 or 1986 would probably sound the death knell for a North American industry that is already permanently bedridden (pp. 64-70).

4.2.2.16(1) Training in Industry

It is likely that in the future, more businesses will phase out training programs, in favor of "master/apprenticeship" relationships. According to Falvey (1985), "shaping a business for the future is a skill that can be learned but not taught." The author cites examples of well-intentioned but misguided decisions of "trained" business professionals, that are compared to the expertise of those who learn "by doing." A master/ apprenticeship of 18 months to 2 years is the method of training preferred by Falvey. Particular suggestions for the "by doing" approach include the utilization of a selective, but inexpensive paperback library, management conducted orientation for new employees, assignment of buddies, follow-up on new employees' progress, maintaining a journal with quantifiable standards of performance, encouraging questions, and last but not least, the keeping of one's sense of humor.

This concept is a reminder that formal education and employee training programs are not always the most successful means of orienting and assimilating new workers into existing programs. It is quite possible, as well, that a master/apprenticeship program may hold attractiveness for potential recruits (p. 23).

5.2.1.04(1) Stability in the Defense Budget

Walsh, Morse, and Plattner (1986) give the following projections for defense spending in the three different budget plans to be considered for FY 87:

Budget Plan for Defense	Amount
Regan's	320 billion
Senate's	301 billion
House's	285 billion (p. 18)

These authors state that "most observers predict the two houses will settle on defense expenditures of about $293 billion, $27 billion short of Reagan's goal. If the President still finds the figure too low, he may ask Senate Republicans to scuttle any compromise with the Democratic-controlled house--throwing the budget process into chaos and creating a potentially nasty showdown this fall" (p. 18).

5.2.1.05(1) Blacks and politics

Hodgkinson (1985) writes that in 1984, 247 black mayors and a total of 5,606 black officials were elected (p. 5).

5.2.1.06(1) Hispanics and politics

Hodgkinson (1985) says Hispanic progress in politics is shown in the 3,128 Hispanics elected to office in the U.S. in 1984 (p. 5).

5.2.2.01(1)Balanced Budget Ammendment Passes

A nationwide poll conducted earlier this year by the Los Angelas Times indicated than on overwhelming majority of the public wants a balanced budget by 1991. But there was very little agreement as to which road to take. Only 22 percent of the population favored the across-the-board spending cuts of the Gramm-Rudman as the best way to reduce the national deficit, while 64 percent said that Congress should make specific reductions on a case-by-case basis.

The question of the constitutionality of Gramm-Rudman is currently working its way through the courts. Earlier, the three-judge panel of the federal district court in Washington, D.C., ruled unanimously that the automatic reduction mechanism in the law was unconstitutional, because it vested executive power in the Comptroller General, an officer subject to and removable by Congress. Therefore, it represented a violation of the separation of powers.

The district court justices stayed the effect of their ruling to permit the law's supporters to appeal directly to the Supreme Court. If the high

court upholds the ruling, the decision would invalidate the $11.7 billion of budget cuts that already have been ordered for the current fiscal year.

In the final analysis, though, all of this legal maneuvering may be in vain. While the lower court struck down the deficit-cutting mechanism, it upheld the law in general. To satisfy the court, Congress could amend the 1921 law that created the office of the comptroller, making the position subject to removal by the President rather than the Congress.

To avoid triggering the Gramm-Rudman automatic reductions in fiscal 1987, President Reagan's budget, or some compromise version of it, must be approved with a deficit no larger than $144 billion. While the effect is the same--an identical gross reduction in the deficit, the President's plan sets specific budget priorities instead of making across-the-board cuts.

Generally, the 1987 budget of "hard choices" contains a $15.9 billion increase in defense outlays and deep cuts in a wide variety of domestic programs. The latter are aimed at reducing the deficit to $143.6 billion. In all, about 40 significant programs would be ended or sharply reduced. In particular, Reagan proposes a $320 billion military budget that would dramatically increase space-defense spending and maintain almost every major weapons program in tact. The plan includes a 6.2 percent increase in actual outlays for the Defense Department and an 11.9 percent increase in presidential budget authority for the purchase of planes, ships and missiles. Conversely, Reagan's proposal would include cuts in agriculture, funding for the United Nations, and the elimination of aid for college students. Social Security beneficiaries would include a 3.7 percent cost of living increase.

5.2.2.01(2) Balanced Budget Amendment Passes (background, no source)

The Gramm-Rudman law, approved by Congress and President Reagan in December of 1985, sets a strict timetable for achieving a balanced budget by the year 1991. The deadlines for this year include the following:

January 15: Preparation of across the budget cuts in spending of up to 11.7 billion dollars could be enacted. Although Social Security, interest on the debt, medicaid, Aid to Families with Dependent Children and six other programs would be exempt, half of the cuts must be in defense programs.

February 1: Approval of automatic spending cuts by President Reagan.

March 1: The cuts take effect unless Congress and the President agree on an alternative.

For the 1987 budget, a similar process is planned with the possibility of an additional 144 billion dollar target. Implications for the Army would be significant. Certainly every area of Army operations would be affected by such a severe tax cut.

5.2.2.05(1) Tax Increases Enacted

Possibility of new taxes (background, no author)

The possibility of new taxes or tax increases remains a significant issue. Gramm-Rudman does not prohibit the government from generating revenue through taxes. Rather, it merely requires that the government not spend money that it doesn't have. While any changes in the federal income tax for the purpose of cutting the deficit are remote, six other ways have been proposed for raising revenues--value-added tax, value-added tax with exemptions, business transfer tax, tax on oil, tax on imported oil, or a 3 cent per gallon increase in the motorfuel tax.

6.2.2.01(1) Return to Energy Crisis

Murray (1985) says that today's energy abundance will not last. We're headed for another round of energy shortages--certainly by the end of this century and possibly well before that. We are seeing signs like those that led to the crises of the 1970's. It is conservatively estimated that U.S. energy demand will be 20% to 25% higher by 2000 than it is today. U.S. crude oil imports rose 8% last year, and the U.S. is using more natural gas than it produces. Today's relative quiet gives U.S. a good opportunity to plan energy development in a non-crisis atmosphere. With enough thoughtful attention to energy now, the predicted crisis need never happen--at least not as severely as before.

7.2.1.04(1) Level of Support for VA Hospitals

Powell (1986) describes the impact Gramm-Rudman. He says that the "VA medical budget faces cuts of almost 5 percent, including layoffs of 7,500" (p. 22). To cut down on the number of patients, a Reagan administration proposal was passed limiting medical care for veterans over 65 to those who earn less than $15,000 per year, with exemption given to those with service-connected conditions (p. 22). This law has yet to be implemented and a delay in its July 1 deadline is predicted.

Perceived poor treatment for veterans' health conditions has an impact on Army recruiting in that recruits often see veterans benefits as one reason for enlisting. If potential recruits view the benefits as eroding, then they will be less likely to enlist.

7.2.2.11(1) The New GI Bill

In its May, 1986 issue, Army, the monthly publication of the Association of the United States Army, discusses the impact of the Regan Administration's proposal to eliminate the new GI Bill and reinstitute the Veterans' Educational Assistance Program (VEAP). The magazine says that "Army leaders feel the new GI Bill is one of the most powerful inducements in recruiting young people of high quality . . ." (p. 77). To back up this point, the magazine notes that "enlistment of high school graduates into the Army Reserve rose 74 percent when comparing firgures for the last six months under VEAP to the first six months under the new GI Bill . . ." (p. 77).

If the new GI Bill is eliminated, the magazine says that the "Army estimates it will lose 10, 600 high school graduate enlistees and 4,200 high quality enlistees annually from the Army Reserve . . ." (p. 77).

7.2.2.11(2) The New GI Bill

N. W. Ayer, Inc., (1981) identified the impact of the replacement of the old GI Bill with the Veterans' Educational Assistance Program. They found that the number of monthly examinations at the Recruiting Stations "clearly" dropped starting in January, 1977 (the first month after the elimation of the old GI Bill). "In addition to the drop in the level, the number of exams processed in December 1976 was extraordinarily high. It was reasonable to assume that this represented a last minute system "'loading'" to take advantage of the GI Bill..." (p. 15).

The implication is that if the New GI Bill is eliminated, there would probably a similar last month surge of examinations followed by an immediate drop off the next month.

7.2.3.01(1) Arms Race

Warner (1985) argues that the resumption of arms control talks by the two superpowers in no way signifies a pause in the strategic arms race. Even if they reach new agreements, both the U.S. and the USSR will almost certainly continue building and deploying large numbers of new strategic weapons. The coming generation of offensive weapons is not more of the same thing. The next round of new deployments on both sides will involve weapons with improved accuracy and increased versatility. None of the weapons now under development offers the prospect of significantly shifting the balance of power, or of enhancing either superpower's relative security. New weapons not on the horizon appear destined to perpetuate the assured retaliation stalemate and the rough parity in intercontinental nuclear attack forces.

With particular regard to nuclear weapons, Spector (1984) reported that as of July 1984, five nations are known to possess nuclear weapons: the U.S., the USSR, Great Britian, France, and China. Although it has never acknowledged having them, Israel is thought to have an arsenal of some 20 untested nuclear weapons. South Africa is thought to have accumulated material for about 15 nuclear devices. India detonated a single nuclear device in 1974, but is not believed to have manufactured weapons. Recent developments suggest that Pakistan will acquire the capability to assemble nuclear weapons, and India and Pakistan may be on the verge of a serious nuclear arms race. In the 12 months ending July 1984, several other nations took important steps to acquire or expand their capabilities. If Pakistan does acquire a nuclear weapons capability in 1985, the international non-proliferation regime is likely to suffer a grievous blow.

7.2.3.01(2) Arms Race

Kittle (1985) says that the militarization of space is happening at a quiet but rapidly accelerating pace. Experts say that the military thrust into space is so advanced that, if war were to erupt tomorrow between the U.S. and USSR, the heavens would be a crucial battleground. The nearly 250 U.S. and Soviet military satellites operating around the globe are indispensable to fighting and avoiding a conflict. In any future conflict, the first blow is likely to be struck in space. By 1990, even more dramatic developments are expected: 1) in early 1985, the first U.S. space shuttle mission will be devoted entirely to military pursuits; at least 16 Defense Department shuttle flights are scheduled to be flown by 1989; 2) a network of 18 U.S. satellites will be operational in 1988, allowing aircraft, ships, and soldiers in the field to pinpoint their exact locations; 3) a laser communications satellite may soon enable U.S. submarines to communicate from the ocean's depths; 4) the Soviet Salyut 7 space station will place heavy emphasis on ocean reconnaissance; 5) a much larger Soviet space station, housing 6 to 12 cosmonauts, will be used for military surveillance and for R&D of space-based weapons; 6) a U.S. antisatellite system superior to the Soviet killer satellite launched in 1982; 7) the invention of directed-energy weapons by both superpowers (p. 28-32)

7.2.3.02(1) Effect of Military Wage Freeze on Recruiting

Dale and Gilroy (1983) write that "A military wage freeze resulting in a decline in military pay relative to civilian pay would cause enlistment rates to drop substantially. . . " (p. 52). They also state that "without considerable relative pay increases, the Army will again experience recruiting difficulties following any significant economic recovery" (p. 30).

7.2.3.03(1) Effect of the loss of "old" GI Bill Benefits and Army's Ultra VEAP on Army Recruiting

Goldberg et al (1984) state that the loss of GI Bill benefits in 1977 caused a large decline in the enlistment supply for the Army. For example, the supply of high school diploma graduates with satisfactory mental test scores declined by 35 percent. The Army's Ultra VEAP program does seem to have an effect on total enlistments (p.15).

7.4.4.01(1) AFQT Scores

Hosek and Peterson reviewed Armed Forces Qualification Test (AFQT) scores [a score derived from a composite of the word knowledge, paragraph comprehension, arithmetic reasoning and numeric operations scores on the Armed Services Vocational Aptitude Battery (ASVAB)] for different groups of young males. Highlights of their study are:

a. While only 15% of high school drop outs are high scorers (AFQT of 50 or more), 53% of the high school seniors and 83% of the postsecondary students are high scorers.

b. Enlistment rates are only somewhat lower for high scorers than the overall rate as shown below:

Overall Scores	FY 79 Enlistment Rate
High School Seniors	3.9
High School Graduates	5.3

Upper AFQT	FY79 Enlistment Rate
High School Seniors	3.3
High School Graduates	5.1

c. Older high school seniors (19 years old) are more likely to enlist than younger ones (17 or 18 years old)

7.4.4.02(1) Blacks in the Army

Quester and Lockman (1984) state that in FY 1982 25% of Army recruits were blacks, the largest proportion of any service. These authors give two reasons for this over representation of blacks:

1. the high unemployment among blacks

2. the absence of racial earnings differential in the military (p. 10)

7.4.4.03(1) Effect of Unemployment on Recruiting

Goldberg et al (1984) have studied the impact of unemployment and other factors on Army recruiting. They conclude that the effect of a one-point increase in the national unemployment rate is to increase Army enlistments by 4.64%. The effects of regional unemployment are consistent, but much lower (p. 10).

In contrast with these findings are those of Dale and Gilroy (1983). They state that, "Although one would intuitively predict a close positive relationship between military enlistments and unemployment (see Chart 1), this effect has not been found consistently in the literature (see Table 7). Fisher (1969), Fechter (1970), Fernandez (1979), McNown et al (1980), and Ash et al. (1983) found statistically insignificant effects. Withers' (1978) unemployment coefficients were statistically significant, but wrong-signed."

7.4.4.03(2) Effect of Unemployment on Recruiting

Harris (1984) says, "The military was chosen by those unemployed or out of the labor force with relatively high frequency" (p. 52). Conversely, he says, "Those working full time or part time were generally found to enter the military at very low percentages" (p. 52).

7.4.4.04(1) Effect of Military Pay on Army Recruiting

Goldberg et al (1984) have studied the impact of military pay, as well as other factors on Army recruiting. Their conclusion was that "pay . . . has a very strong effect on enlistment supply. A 1% increase in relative military pay would cause the supply of 1-3A HSDGs to increase by 2.29% for the Army. . . ." (p. 10).

7.4.4.04(2) Effect of Military Pay on Army Recruiting

Hosek, Fernandez, and Grissmer (1984) have developed two scenarios, "high" pay and "low" pay projections for military salaries, and evaluated their impact on military recruitment.

7.4.4.04(3) Effect of Military Pay on Army Recruiting

To match the civilian competition for the smaller youth cohort of the 1990's, Quester and Lockman (1984) predict that "the military will need to pay 10 to 12 percent more than its current real wage level levels by 1995" (p. 13).

7.4.4.06(1) Military Recruiting in General

Borjas et al (1985) have reviewed earlier models that were used to predict military recruiting in the early 1980's. These models predicted that recruiting goals for the military would not be met in these years. Yet, these shortfalls did not occur. Borjas et al also make their own prediction for military recruitment for the future. They say that "the outlook for the volunteer military is not bleak, but bright. Even if some declines occur in the recruitment of quality youth in the coming years, the outcome will not approach the conditions experienced in 1979. Even our lowest projection for 1993 puts enlistment contracts of high-scoring high school graduates at a level that is 37 percent above the 1979 level for the Air Force, and more than double the 1979 level for the Army" (pp. v-vi).

7.4.4.07(1) Recruiting Hispanics

Sahai (1984) gives the following recommendations for recruiting Hispanics:

"Based on the Knowledge gained from the review of the literature the following recommendations are made:

1. Develop an accurate system of identifying Hispanics during the enlistment process, and conduct a census of Hispanics in the Army to obtain reliable statistics on Hispanic participation in the Army.

2. Develop a training program to help recruiters penetrate Hispanic communities.

3. Increase Army and recruiter visibility in the Hispanic communities by participation in 'fiestas' and other community activities.

4. Conduct more educational awareness visits by the regional recruiting officers, coordinated with local Hispanic leaders, parents groups, and school counselors.

5. Establish a national and regional coordinator of Hispanic (or minority) recruitment.

6. Increase Army ROTC programs in states with high concentration of Hispanics, including Puerto Rico, to attract potential officers.

7. Support establishment of remedial English schools, like the one established by the National Guard in Puerto Rico. Funding through CETA, Vocational or Adult Education may be obtained to sponsor this type of school.

8. Explore the feasibility of administering a Spanish version of ASVAB to the Hispanics whose primary language is Spanish.

9. Use local and national Spanish language advertising, tailored to specific

Hispanic ethnic groups.

10. Develop a method to locate high quality Hispanic youth by zip code and target direct mail Spanish advertising to penetrate the market.

11. Assign bilingual or Hispanic recruiters to recruit in Hispanic areas.

12. Assign Spanish-speaking career counselors within the MEEPS to assist Hispanic recruits with Army career choices.

13. Conduct additional research on the issues of Hispanic representation in the Army, in support of developing policies and programs for attracting more Hispanics" (p. 17).

7.4.4.08(1) Age of Military Personnel

Hosek, Fernandez, and Grissmer (1984) raise the question of age in evaluating the impact of this policy on recruiting. They suggest that military planners should consider the impact of an older force on promotions and morale, the smaller cohorts of eligible recruits of the 80's, and the problems associated with boom and bust cycles in recruitment.

7.4.4.08(2) Age of Military Personnel

Tan and Ward (1984) point out that a policy change in the desired personnel force structure could have a big impact on the pay structure. If the Army decides to become "more career and less first-term oriented," then it will have to relook the pay issue to keep these career personnel (p. 44).

7.4.4.09(1) Reenlistment Bonuses

Hosek and Peterson (1985) study the impact of reenlistment bonuses on retention rates and conclude the following:

1. Reenlistment bonuses are a powerful tool for controlling retention in targeted occupations.

2. Lump sum bonuses are more cost-effective than installment bonuses, at least at the first-term retention point.

3. Reenlistment bonuses are effective countercyclical tools; that is, higher bonuses have the potential to counteract the effects of lower unemployment rates on the retention rate and on the expected personyears of service.

4. Reenlistment bonuses can play an important role in force shaping (pp. 1-2).

7.4.4.09(2) Effect of Bonuses on Recruiting

Goldberg et al (1984) conclude that bonuses tend to channel enlistees

in occupations rather increase the total supply of enlistees. Further they say that bonuses have a "relatively small" effect in channeling these enlistments.

7.4.4.10(1) Impact of Recruiters on Recruiting

Dertouzos (1984) argues that researchers have not paid enough attention to recruiters. Instead, they have looked too much at supply factors such as cohort size, unemployment rate, etc. "However," he says, "recruiters do not passively process enlistments" (p.12).

Dertouzos concludes that "although Army recruiters appear to be motivated to attain quotas for both high and low quality enlistments, there exist few incentives to exceed them" (p. 27). Therefore, future studies should look closely at the impact of recruiter rewards as well as their relationship with supply factors (p. 28).

7.2.4.10(2) Effect of Recruiters on Army Recruiting

Goldberg et al (1984)state that increasing the number of recruiters is an efficient way to increase enlistments. Their figures show that a 10% increase in Army recruiters would have a marginal cost of $4,700 per enlistee. This compares favorably with the "old" GI Bill's marginal cost of $111,100 per enlistee and a 10 percent increase in pay's marginal cost of $13,900 (pp. 17-20)

7.4.4.11(1) Predicting Recruiting Shortfalls

Goldberg, Greenston, Andrews, and Hermansen (1984) have developed a model, the Recruitment Early Warning System (REWS), which forecasts the recruitment of high quality enlistment for the military. REWS, in September, 1984, predicted a shortfall in high quality recruits for the Army as shown below:

Army 1-3A Contracts

Month	Number of Recruiters	Percentage Met	Goal
Oct 84	5720	59%	4950
Nov 84	5111	68%	4950
Dec 84	5159	71%	4950
Jan 85	6899	68%	4950
Feb 85	5409	84%	4950
Mar 85	4810	94%	4950
Apr 85	5905	67%	4950
May 85	5234	72%	4950
Jun 85	5218	85%	4950 (p. 36)

7.4.4.11(2) Predicting Recruiting Shortfalls

Goldberg, Greenston, Andrews, and Hermansen (1984) have begun to develop an Accession Contingency Planning Process (ACPP) to help reduce predicted recruiting shortfalls. Specifically, two concepts, an Offline Adjustment Process (OAP) and an Immediate Contingency Allocation Authority (ICAA) were chosen by the military for further development. However, development of these concepts was beyond the scope of this particular study (pp. 66-67).

7.4.4.13(1) The Effect of Navy Advertising on Army Recruiting

N. W. Ayer, Inc., (1981) found "weak evidence" to suggest "that increases in Navy advertising expenditure levels result in a depressing effect on the number of people who are stimulated to pursue Army enlistment..." (p. 20). For this reason, and also because of limited data on Navy spending on advertising, N. W. Ayer, Inc., dropped this variable from further consideration (p. 20).

7.4.4.14(1) Impact of Advertising on Recruiting

N. W. Ayer, Inc., (1981) determined the following estimated impact of advertising on Army recruiting:

> "An incremental ten thousand dollars (1978 dollars) in advertising expenditures in a given month will bring additional Category I-IIIA prospects through the examination process at the rates of
>
> > One prospect a month for each of eight months beginning in the fourth month after the incremental expenditure, due to the long-term aggregate.
> >
> > Five additional prospects within one month of the incremental expenditure, due to the immediate response aggregate" (p. 42)

The same study found the higher category recruits were more sensitive to advertising than the lower category recruits (p. 44).

These results should be viewed with the knowledge that N. W. Ayer, Inc., is one of the nation's largest advertising agencies and that it is in their best interest to present advertising in a positive manner.

7.4.4.15(1) Youth Attitude Tracking Survey (YATS) and Army Recruiting

Orvis and Gahart (1985) "found that a composite of two YATS intention measures did a good job of tracking the enlistment actions of the respondents" (p. 8). This relationship is shown in the chart below:

ENLISTMENT AND WRITTEN EXAMINATION RATES
VARY SIGNIFICANTLY BY INTENTION LEVEL
(Combined YATS Surveys, Spring 1976-Fall 1980)

Enlistment Intention Level	Percentage Enlisting by March 1984	Percentage Testing by March 1984
Positive intention and unaided mention	37	55
Postive intention, no unaided mention	15	28
Negative intention	6	12

(p. 8).

However, the authors point out that while the vast majority of young people showed a negative intention about enlisting, almost one-half of this group (46 percent) did enlist as shown in the figures below:

MANY ENLISTEES DRAWN FROM NEGATIVE
INTENTION GROUP
(Combined YATS Surveys, Spring 1976-Fall 1980)

Enlistment Intention Level	Percentage of Sample	Percentage of Enlistees
Positive intention and unaided mention	5	18
Positive intention, no unaided mention	23	36
Negative intention	72	46

(p. 19).

The authors found that in general there were several common characteristics in enlistees from certain educational levels:

SUMMARY OF RESPONDENT GROUPS AND
ENLISTEE CHARACTERISTICS

Group	Characteristics of Enlistees (Controlling for Intention
High school students	Not college bound Need good job Believe military offers better job security and chance for developing potential
Nonstudents	Young Recent job turbulence or out of labor force Believe military offers better job security and chance for developing potential
College students	Possible funding problems

(p. 34)

7.4.4.16(1) Education level of enlistees

The New York Times (October 20, 1985) reports that the Army has begun using celebrities to urge high school age youth to stay in school to combat 26% U.S. dropout rate. The high school diploma is considered the best single predictor of success in military service. The dropout rate has been approximately 25% for the last several years. The drop in the number of teens in the population post baby boom means that the applicant pool is less; this, coupled with any increase in the dropout rate could mean fewer and less quality recruits.

The Army is currently using celebrities to urge high school age youth to stay in school with the theme, "Don't start your future with a handicap." Future TV spots will feature blacks and hispanics with themes of "Go to college" and "Learn a skill." (p. 25)

7.4.4.18(1) Hispanics in the Military

Sahai (1984) gives the following numbers and percentages of Hispanics in the military services:

Hispanics in the Military by Service

Branch	Officers	Enlisted	Total
Navy	545(0.65%)	14,631(3.1%)	15,176(2.8%)
Marines	183(0.27%)	8,947(4.7%)	9,150(4.7%)
Coast Guard	54(0.81%)	1,077(3.5%)	1,131(3.0%)
Army	1,239(1.30%)	30,445(4.4%)	31,654(4.0%)
Air Force	753(1.70%)	18.696(3.9%)	20,449(3.5%)

(p.16)

7.4.4.19(1) Differences in High School Seniors and High School Grads With Respect to Recruiting

Hosek and Peterson (1985) found that high school seniors differ substantially from high school graduates in "the empirical determinants of their enlistment decisions. Graduates appear more sensitive to work-related variables such as employment status, wage rate, labor force experience, job tenure, and if not currently employed, duration of joblessness. Seniors, by contrast, appear more sensitive to education-related variables representing learning proficiency, ability to finance further education, and parental influence" (pp. v-vi).

7.4.4.20(1) Effect of Air Force Recruiting on Army Recruiting

Buddin and Witsberger (1985) prepared a study to show what would happen to the displaced males if the Air Force recruited a higher percentage of women. Their study, which was paid for by the Air Force, concluded that, "if the Air Force reduced its enlistment requirement, most of the displaced male Air Force recruits would choose to remain civilians. Few would enlist in the other service branches. In particular, we estimate that only 5 to 17 percent would enlist in the Army" (Buddin and Witsberger, 1984, p. v).

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Appendix B

ENLISTMENT MOTIVES IN THE "MOST LIKELY" FUTURE: A CLOSER LOOK

Introduction

This appendix presents an updated version of a report that was completed as part of the larger study presented in the body of this document. The earlier version, which was prepared by W.I. Boucher and entitled, Why Army Recruits Enlist: A Study of Motives, was submitted separately to the Army Research Institute in November 1986. Subsequent discussion of this report, including suggestions made during an In-Progress Review in December 1986, helped in drafting this revision.

As indicated at length in Chapters 1 and 3, the fundamental aim of the basic study was to develop a set of forecasts and integrate them to produce a policy-relevant image of the "most likely" future environment for Army recruiting. An important question in this regard concerns the possible motives that recruits will have for enlisting during the period covered in this "most likely" future.

In the first-round questionnaire used in the Delphi study to gather the environmental forecasts, the respondents were asked to evaluate 15 motives. Coincidentally, Benton International was asked by the Office of the Deputy Chief of Staff for Personnel, Department of the Army, if, as part of the environmental study, it would be able to provide assistance to DCSPER's Market Segmentation Study. The obvious opportunity was to take another look at motivations.

To that end, the original set of 15 motives was greatly expanded and a new, separate questionnaire was designed and administered in August-September 1986. Thirty-three responses were received, principally from officers, enlisted men, and civilians in USAREC Recruiting Brigades and Headquarters. All of these respondents were also participants in the Delphi. This appendix presents the findings from this special survey.

The Special Survey

Why do recruits enlist in the Army? What factors in their background influence the decision? What aspects of military service--Army service, in particular--are taken into account? How important is each of these considerations in the decision? Is their relative importance likely to change over the next 15 years? If so, how?

This appendix attempts to answer these questions on the basis of the results from the questionnaire mentioned above. This questionnaire presented 43 possible motives (Table B1), invited the respondents to suggest additions, and then requested four numerical estimates for each motive. Specifically, the respondents were asked, first, to imagine a representative sample of 100 actual recruits (males only). Then they were asked the following four questions on each motive:

1. In today's environment, how many of these recruits will have CONSIDERED this motive seriously in making their decision?

2. How many of the recruits who seriously CONSIDERED this motive will also have found it to be DECISIVE, either by itself or in combination with other DECISIVE motives?

3. As you look ahead over the next 15 years, is there likely to be a change in the number of recruits who CONSIDER this motive seriously? If so, estimate the new percentage.

4. Is there likely to be a change in the number of recruits who find this motive DECISIVE? If so, estimate the new percentage.

In making these estimates, the respondents were asked to assume that they had perfect knowledge of what these recruits were (or would be) thinking. The recruit might not confess that he is joining the Army "to win the respect of others" or "to live out a fantasy," but that may actually be the reason. A good judge of character would probably be able to tell if this were so. The respondents were asked, in effect, to be excellent judges of character.

Table B1

MOTIVES EVALUATED IN THE SURVEY

1. To be a soldier.
2. To serve my country.
3. To better myself.
4. To prove that I can make it.
5. To earn the respect of others.
6. To get physical training and challenge.
7. To get time to figure out what I really want to do.
8. To get money for college.
9. To get money for vocational/technical or business training.
10. To get trained in a skill that will help me get a civilian job.
11. To travel.
12. To earn more money.
13. To get a job (i.e., end my current unemployment).
14. To be away from home on my own.
15. To get away from a personal problem.
16. To escape parental criticism/nagging.
17. To follow a brother (or sister).
18. To follow (or enlist with) a friend.
19. To follow in a family tradition.
20. To belong to a group; to achieve identity.
21. To take a break between school and a career (already chosen).
22. To find adventure/excitement.

Table B1 (cont'd.)

23. To learn what Army life is all about.

24. To use and work with exotic technologies (e.g., advanced weapons, communication systems, codes, etc.)

25. To get a bonus and buy something I couldn't otherwise afford (e.g., a car).

26. To improve a skill I already have (e.g., auto mechanic).

27. To impress my friends.

28. To impress a special friend (e.g., a possible future spouse).

29. To live out a fantasy (e.g., John Wayne or Rambo).

30. To put some discipline in my life.

31. To work out a hostility.

32. To earn money to help my family at home (i.e., parents, siblings).

33. To be able to use weapons legally.

34. To learn self-defense/survival skills.

35. To work with my spouse (who is already in the Army).

36. To imitate a role model (e.g., a favorite teacher, a famous soldier).

37. To get to a particular place (e.g., Japan, Paris, Southern California).

38. To get security; to end worries about food, housing, health care, etc.

39. To have a chance to experience combat.

40. To learn a foreign language.

41. To get into OCS or West Point.

42. To do something I could not do in the other services (e.g., become a helicopter pilot without having a college degree).

43. To put in 20 years, retire, and then do what I <u>really</u> want to do.

Results and Discussion

The detailed results are presented in Table B2. These results are summarized in Fig. B1 (for "today") and Fig. B2 (for "the next 15 years").

These figures warrant close attention. Among the observations and conclusions that they suggest are the following seven.

1. "Today" and "Future" Results Are Often Similar. On first glance, there is obviously a close general resemblance between the data in Figs. B1 and B2. In fact, as indicated in Table B2, the results are identical in 42 percent of the cases (i.e., for 18 of the motives, the scores on both consideration and decisiveness are the same for Today and Future). Importantly, these 18 cases include seven of the 16 motives that are (or will be) considered seriously by 30 percent or more of recruits:

M3. To better myself.

M10. To get trained in a skill that will help me get a civilian job.

M13. To get a job (i.e., end my current unemployment).

M11. To travel.

M2. To serve my country.

M7. To get time to figure out what I really want to do.

M14. To be away from home on my own.

Thus, these extremely important motives today are likely to retain their importance in the future: they will be considered seriously as often, and they will be decisive as often. If so, the major policy implication is clear: Recruitment methods (and supporting materials) that address these motives very successfully need not be changed. To the extent that these methods are not well-known among recruiters generally, they should be documented and taught.

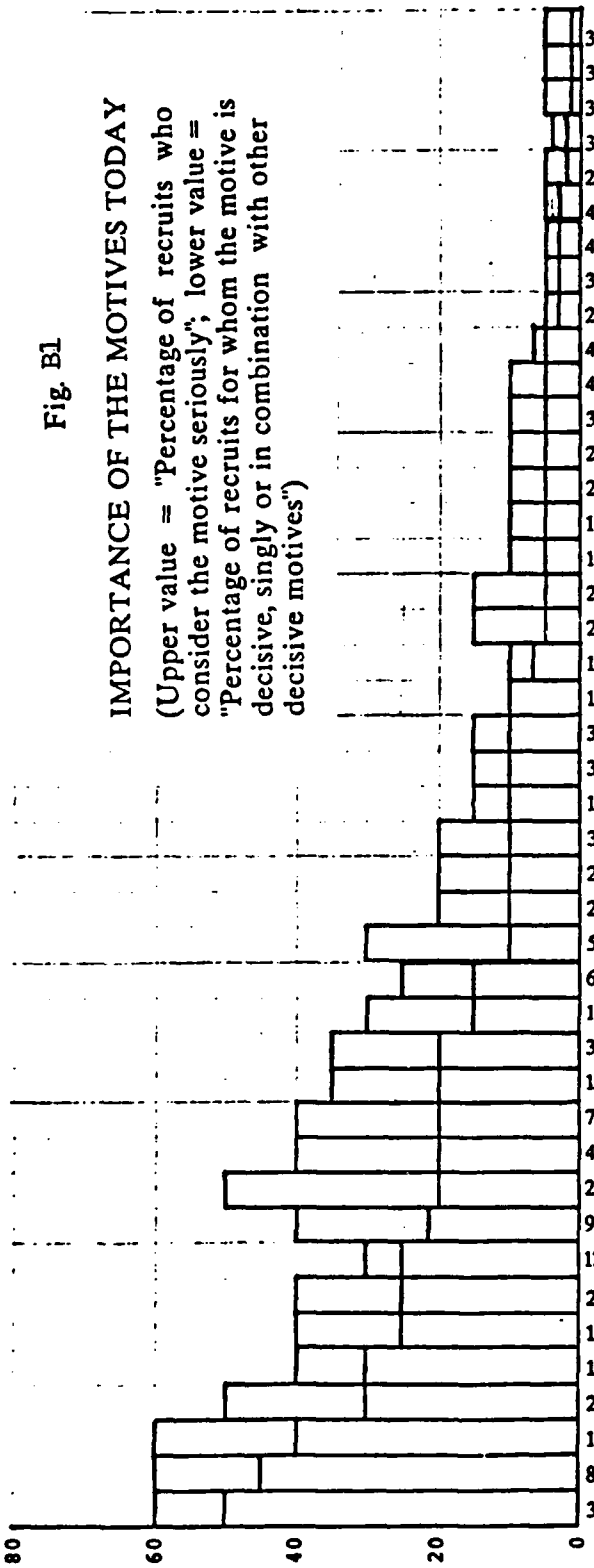
2. But There Are Differences Between "Today" and "Future" in Many Cases. Note, for example, that three of the motives change both in consideration and decisiveness, and in each case the change is an increase:

Table B2

MEDIAN ESTIMATES ON "C" ("CONSIDERED SERIOUSLY") AND "D" ("DECISIVE") FOR EACH MOTIVE

M	TODAY		FUTURE		Δ C	Δ D
	C	D	C	D		
1	35	20	40	20	+14.3	0.0
2	50	20	50	20	0.0	0.0
3	60	50	60	50	0.0	0.0
4	40	20	35	20	-12.5	0.0
5	30	10	30	12	0.0	
6	25	15	25	20	0.0	+33.3
7	40	20	40	20	0.0	0.0
8	60	45	69	50	+15.0	+11.1
9	40	22	40	25	0.0	+13.6
10	60	40	60	40	0.0	0.0
11	40	25	40	25	0.0	0.0
12	30	25	30	20	0.0	-20.0
13	40	30	40	30	0.0	0.0
14	30	15	30	15	0.0	0.0
15	10	10	10	10	0.0	0.0
16	10	5	10	5	0.0	0.0
17	10	7	10	8	0.0	+14.3
18	10	5	10	8	0.0	+60.0
19	15	10	15	15	0.0	+50.0
20	15	5	15	10	0.0	+100.0
21	15	5	18	5	+20.0	0.0
22	40	25	40	28	0.0	+12.0
23	10	5	10	5	0.0	0.0
24	20	10	25	15	+25.0	+50.0
25	50	30	50	25	0.0	-16.7
26	20	10	20	10	0.0	0.0
27	5	3	10	3	+100.0	0.0
28	5	2	5	2	0.0	0.0
29	10	5	13	5	+30.0	0.0
30	20	10	25	10	+25.0	0.0
31	5	1	5	1	0.0	0.0
32	15	10	15	10	0.0	0.0
33	5	1	5	1	0.0	0.0
34	10	5	10	5	0.0	0.0
35	4	2	4	2	0.0	0.0
36	5	3	5	3	0.0	0.0
37	15	10	18	10	+20.0	0.0
38	35	20	40	20	+14.3	0.0
39	5	1	10	1	+100.0	0.0
40	5	3	5	4	0.0	+33.3
41	5	3	6	5	+20.0	+66.7
42	10	5	12	5	+20.0	0.0
43	7	5	7	3	0.0	-40.0
	971	573	1017	601	+4.7	+4.9
Av.	22.6	13.3	23.7	14.0	--	--

Fig. B1

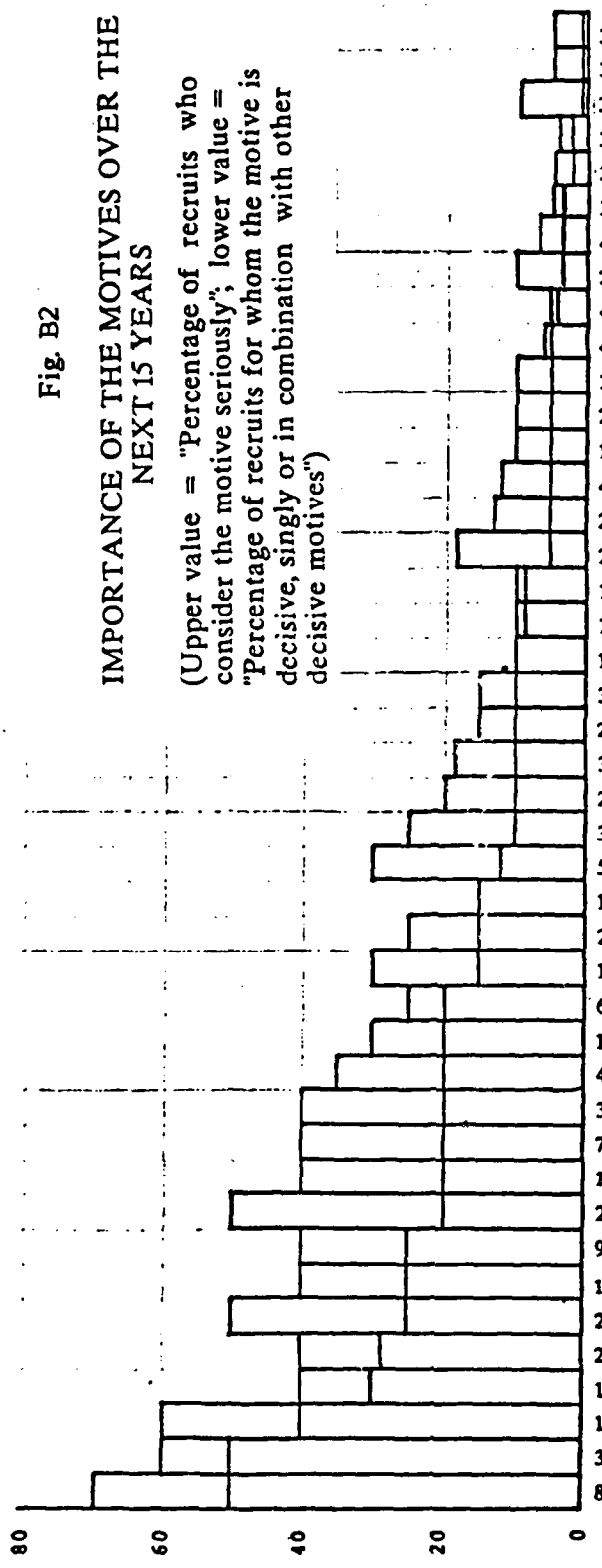


39. To have a chance to experience combat.
33. To be able to use weapons legally.
31. To work out a hostility.
35. To work with my spouse (who is already in the Army).
28. To impress a special friend (e.g., a possible future spouse).
41. To get into OCS or West Point.
40. To learn a foreign language.
36. To imitate a role model (e.g., favorite teacher, a famous soldier).
27. To impress my friends.
43. To put in 20 years, retire, and then do what I <u>really</u> want to do.
42. To do something I could not do in the other services
34. To learn self-defense/survival skills.
29. To live out a fantasy (e.g., John Wayne or Rambo).
23. To learn what Army life is all about.
18. To follow (or enlist with) a friend.
16. To escape parental criticism/nagging.
21. To take a break between school and a career (already chosen).
20. To belong to a group; to achieve identity.
17. To follow a brother (or sister).
15. To get away from a personal problem.
37. To get to a particular place (e.g., Japan, Paris, Southern California).
32. To earn money to help my family at home (i.e., parents, siblings).
19. To follow in a family tradition.
30. To put some discipline in my life.
26. To improve a skill I already have (e.g., auto mechanic).
24. To use and work with exotic technologies
5. To earn the respect of others.
6. To get physical training and challenge.
14. To be away from home on my own.
38. To get security; to end worries about food, housing, health care, etc.
1. To be a soldier.
7. To get time to figure out what I really want to do.
4. To prove that I can make it.
2. To serve my country.
9. To get money for vocational/technical or business training.
12. To earn more money.
22. To find adventure/excitement.
11. To travel.
13. To get a job (i.e., end my current unemployment).
25. To get a bonus and buy something I couldn't otherwise afford
10. To get trained in a skill that will help me get a civilian job.
8. To get money for college.
3. To better myself.

Fig. B2

IMPORTANCE OF THE MOTIVES OVER THE NEXT 15 YEARS

(Upper value = "Percentage of recruits who consider the motive seriously"; lower value = "Percentage of recruits for whom the motive is decisive, singly or in combination with other decisive motives")



33. To be able to use weapons legally.
31. To work out a hostility.
39. To have a chance to experience combat.
35. To work with my spouse (who is already in the Army).
28. To impress a special friend (e.g., a possible future spouse).
36. To imitate a role model (e.g., favorite teacher, a famous soldier).
43. To put in 20 years, retire, and then do what I <u>really</u> want to do.
27. To impress my friends.
40. To learn a foreign language.
41. To get into OCS or West Point.
34. To learn self-defense/survival skills.
23. To learn what Army life is all about.
16. To escape parental criticism/nagging.
42. To do something I could not do in the other services
29. To live out a fantasy (e.g., John Wayne or Rambo).
21. To take a break between school and a career (already chosen).
18. To follow (or enlist with) a friend.
17. To follow a brother (or sister).
15. To get away from a personal problem.
32. To earn money to help my family at home (i.e., parents, siblings).
20. To belong to a group; to achieve identity.
37. To get to a particular place (e.g., Japan, Paris, Southern California).
26. To improve a skill I already have (e.g., auto mechanic).
30. To put some discipline in my life.
5. To earn the respect of others.
19. To follow in a family tradition.
24. To use and work with exotic technologies
14. To be away from home on my own.
6. To get physical training and challenge.
12. To earn more money.
4. To prove that I can make it.
38. To get security; to end worries about food, housing, health care, etc.
7. To get time to figure out what I really want to do.
1. To be a soldier.
2. To serve my country.
9. To get money for vocational/technical or business training.
11. To travel.
25. To get a bonus and buy something I couldn't otherwise afford
22. To find adventure/excitement.
13. To get a job (i.e., end my current unemployment).
10. To get trained in a skill that will help me get a civilian job.
3. To better myself.
8. To get money for college.

M8. To get money for college. This motive jumps 15 percent to become the one considered seriously by most recruits (69 percent). And it comes into a tie for first place with M3 ("To better myself") as the motive most frequently decisive (50 percent of recruits).

M24. To use and work with exotic technologies (e.g., advanced weapons, communication systems, codes, etc.). As suggested in the "most likely" scenario (Chap. 3), the upward movement in this motive is consistent with forecasts of the recruiting environment, particularly the forecasts regarding the level of Army modernization and the growth in civilian and Army jobs requiring the use of computers.

M41. To get into OCS or West Point. This motive, while rarely considered by recruits, becomes substantially more decisive for those who do. Today, according to the respondents, 60 percent of those who take the motive seriously find it decisive. In the future, that number is forecasted to rise to more than 80 percent. At the same time, a slight increase is forecasted in the number who will take it seriously. This result also appears to be consistent with forecasts in the "most likely" future which show increases in the level of emotional maturity of young men, the level of compatibility of the values of NPS recruits and those of the Army, and other relevant factors.

For ten of the motives (23 percent), there is a change only in the percentage of recruits who will consider them seriously. In all of these cases, except for M4 ("To prove that I can make it"), the shift is upward. The drop in M4 (from 40 percent to 35 percent) suggests that for many thousands of recruits, vague appeals along this line are likely to be less intriguing in the future than they are today.

Twelve of the motives (28 percent) shift only in the percentage of recruits who find them decisive. In three cases, the shift is toward a lower value:

M12. To earn more money.

M25. To get a bonus and buy something I couldn't otherwise afford (e.g., a car).

M40. To learn a foreign language.

Interestingly, these three motives are alike in suggesting a sense of self-interest or a lack of interest in an Army tour per se. Their drop in importance tracks well with

the "most likely" future, in which increasing numbers of recruits enlist because they share Army values and want to serve.

Thus, while Figs. B1 and B2 resemble each other generally, changes are forecasted in the importance of more than half of the motives. Close examination of the shifts may reveal opportunities in sales strategy and advertising for the Army. Clearly, recruitment methods that ignore these shifts are likely to be less successful in meeting Army goals. Any upward shift in consideration or decisiveness presents an opportunity to refine existing methods that work well. Any downward shift suggests abandoning or down-playing the use of approaches in that area–no matter how well they work today.

3. Gaps Between the Scores on "Consideration" and on "Decisiveness" Are Revealing. Sometimes this gap is very large. An interesting example is provided, in both Figs. B1 and B2, by M2, "To serve my country," which is considered seriously by 50 percent of recruits but is decisive for only 20 percent. In general, there is a possibility that the difficulty of the recruitment sale increases with the size of this gap. Presumably, the narrower the gap, the easier the sale, and vice versa.

This rule assumes, of course, that the Army would in fact want to recruit someone who was acting solely or principally on the basis of the motive in question. For instance, in Fig. B2, there are two cases with no gap at all between consideration and decisiveness:

M19. To follow in a family tradition.
M15. To get to away from a personal problem.

The rule indicates that each should be a very easy sale. On the face of it, however, the M19 recruit might be much more attractive to the Army than the M15 recruit. (Of course, neither might qualify. Or the M15 recruit might be much better than the M19 recruit, all things considered.) But to the extent that, by itself, an appeal to motives is critical in the recruiting sale, an examination of the gap between consideration and decisiveness can be quite helpful.

Consider the data in Table B3. To keep the table as simple as possible, it includes only those motives which scored above average on decisiveness for Today and Future. For each, the decisiveness score as a percentage of the consideration score is shown. As indicated, the higher the percentage, the smaller the gap. Therefore, the motives toward the bottom of the Table are most problematical, in the sense that a sale which keys off one of these motives is likely to be more time-consuming and frustrating than one that keys off the motives at the top, since the recruiter will have to invest additional time to satisfy the curiosity of many recruits, and they will want to be satisfied, but a substantial proportion of them will not make their decision on that basis.

M25 ("To get a bonus and buy something I couldn't otherwise afford") is especially noteworthy in this regard, because it is one of the more decisive motives.

Ideally, of course, one would want the most decisive motives to have as small a gap as possible. In fact, these motives do appear toward the top of Table B3. Indeed, the relatively small gap on M3 ("To better myself") suggests that the current "Be All That You Can Be" campaign is very well targeted. Note, however, that the gap grows increasingly large for the other decisive motives. It would appear that the efficiency and effectiveness of the recruiting sale could be improved substantially in these cases. For instance, advertising or brochures specifically designed to answer questions in these areas might well save recruiters a good deal of time, without any risk to the rate of sales influenced by these motives.

4. More Motives Are at Play Than Earlier Research Might Suggest. A fairly recent Army Research Institute study of the motives of Army recruits identified and evaluated only 14 possibilities (Gade et al., October 1985). These 14 motives were included as M1-M10 and M12-M15 in the present survey. (M11–"To travel"–was added by the author.) As shown in Figs. B1 and B2, however, a number of additional motives were judged to rank with these 15 in importance. In Fig. B2, for example, using only the decisiveness score, M15 ("To get away from a personal problem") is now tied for 20-25th place. That is, new motives have been identified in this survey that ranked higher than M15 on decisiveness. In fact, six motives scored higher:

Table B3

"GAP" ANALYSIS FOR THOSE MOTIVES ABOVE THE AVERAGE SCORE ON DECISIVENESS"*

(The higher the percentage, the smaller the gap.)

	Motive	Today	Future
M19.	To follow in a family tradition.	67	100 %
*M3.	To better myself.	83	83
M6.	To get physical training and challenge.	60	80
*M13.	To get a job (i.e., end my current unemployment).	75	75
*M8.	To get money for college.	75	72
*M22.	To find adventure/excitement.	63	70
*M10.	To get trained in a skill that will help me get a civilian job.	67	67
M12.	To earn more money.	83	67
*M9.	To get money for vocational/technical or business training.	55	63
*M11.	To travel.	63	63
M24.	To use and work with exotic technologies.	50	60
M4.	To prove that I can make it.	50	57
M1.	To be a soldier.	57	50
M7.	To get time to figure out what I really want to do.	50	50
M14.	To be away from home on my own.	50	50
*M25.	To get a bonus and buy something I couldn't otherwise afford.	60	50
M38.	To get security; to end worries about food, housing, health care,etc.	57	50
M2.	To serve my country.	40	40

*The average "decisiveness" score is 13.3 for Today and 14.0 for Future. An asterisk indicates a motive that is forecasted to be decisive for 25 percent or more of future recruits who consider it seriously. These asterisked motives are the most important future motives.

	Motive	Rank (Fig. B2)
M22.	To find adventure/excitement.	5
M25.	To get a bonus and buy something I couldn't otherwise afford (e.g., a car).	6-7
M11.	To travel.	6-7
M38.	To get security; to end worries about food, housing, health care, etc.	12
M24.	To use and work with exotic technologies (e.g., advanced weapons, communication systems, codes, etc.).	17-18
M19.	To follow in a family tradition.	17-18

This list may be valuable in suggesting new themes in advertising or sales, or themes that may warrant greater emphasis. Note especially M22, M25, M11, and M38, each of which was judged to be decisive in 20 percent or more of enlistment situations, both Today and Future.

5. The Recruitment Decision Is Very Complex. There are obviously many motives--a few of them important to many or most recruits and the rest important only to a handful. But note that every motive, even the most bizarre or unworthy, has a decisiveness score above zero for today and tomorrow. Further, recall that the question on decisiveness asked, "What percentage of recruits who consider a motive seriously will find it decisive, either by itself or in combination with other decisive motives?" It appears that rarely will a recruit consider only one motive or decide on the basis of only one. Indeed, the data strongly suggest otherwise. For example, if the sum of the percentages for all of the motives on each variable (shown in Table B2) is divided by 100, then it would appear that the average recruit seriously considers 9-10 of the 43 motives, and of those, 5 or 6 in combination prove to be decisive. If so, then even in the average case, the enlistment decision is quite complex. The "most likely" scenario (or its alternatives) provides no reason to believe that this complexity will decline in the years ahead.

Accordingly, there may be opportunities to alter the sales process (and advertising) to reach a level of sophistication that is more attuned to the actual uncertainties and needs of the potential recruit in making his decision. An essential piece of information toward this end would be some indication of how motives cluster together in the minds of potential enlistees. As indicated later, this should be a target for subsequent research.

6. Additional Motives May Yet Be Found. The questionnaire used in this survey invited the respondents to suggest additional motives "that we may have missed." Three of the respondents offered ideas. These new motives, some of which appear to duplicate items in the original set of 43, are listed in Table B4. Because the survey had only one round, these ideas were not evaluated by the entire panel; where estimates are shown, they are from the person who proposed the motive.

7. Female Recruits May Favor Different Motives. Finally, although the questionnaire focused on the motives at play in the decision of males to enlist in the Army, the respondents were also asked to review the set of motives when they had finished and to circle the item number of the 4-5 motives that they believed "will be most decisive in influencing women to enlist in the Army in the future." Only 10 of the participants answered this question, yet a pattern emerged in the results. The motives that were identified most frequently are shown below:

	Motive	Percentage of the Votes
M8.	To get money for college.	14%
M4.	To prove that I can make it.	12%
M10.	To get trained in a skill that will help me get a civilian job	12%
M14.	To be away from home on my own.	12%
M3.	To better myself.	6%
M12.	To earn more money.	6%
M38.	To get security; to end worries about food, housing, health care, etc.	6%

Table B4

ADDITIONAL MOTIVES SUGGESTED BY THE RESPONDENTS

MOTIVE FOR ENLISTMENT	MALE RECRUITS			
	Today		Next 15 Years	
	C	D	C	D
Guaranteed assignment overseas in a specific geographical location of choice.	30	25	30	25
Free medical and dental care.	40	35	40	35
Retirement benefits.	45	10	45	10
Service in a combat-type unit.	2	1	2	1
Guaranteed assignment in U.S. in a specific geographical location of choice.	40	30	40	30
Half pay (reduced pay) with short enlistment and financial assistance for college.	25	20	25	20
Formal classroom training in civilian skill.	15	10	15	10
Low interest loans in service and after to buy home.	50	40	50	40
Opportunity to take college credit courses, off-duty, with Army paying 75% of tuition.	50	30	50	30
Enlistment in a 4 or 6 year apprenticeship program.	30	10	30	10

Table B4 (Cont.)

MOTIVE FOR ENLISTMENT	MALE RECRUITS			
	Today		Next 15 Years	
	C	D	C	D
Payment of prior student loans, with amount depending on number of years of service.	25	20	25	20
Avoid jail.	2	2	4	4
Meet attractive, sexy women (or men, as the case may be).	--	--	--	--
Related to M16: Appease a parent or guardian. ("Many applicants are motivated to enlist not just because they know they are underachieving in their lives, but also because Mom or Dad know the same thing.")	30	5	30	5
To enlist for the recruiter (if he has represented the Army well and taken care of my needs)	50	45	60	50

As with the results shown in Fig. B2, M8 ("To get money for college") is in first place for females in the future. The next three most decisive motives, M4, M10, and M14, ranked 3, 9-15, and 16-18 respectively, for the males–a difference that may be worth attention. Similarly, the remaining three decisive motives, M3, M12, and M38, ranked 1-2, 9-15, and 9-15, respectively, for the males–again, an apparently great difference.

These results, if confirmed, may be useful in developing sales strategies and advertising campaigns tailored to the potential female recruit.

Recommendations

Market segmentation research can benefit from an examination of the present and likely future of the motives that affect the recruitment decision. Even the results from a survey as limited as the one reported here can be illuminating, and can suggest possible important uses, as we have tried to indicate briefly in the preceding pages.

This survey lays the foundation for establishing an excellent list of motives that might well be used in subsequent research (and policy planning). Two significant possible lines of research suggest themselves. The first is to undertake the same sort of survey with a sample of actual recruits and a sample of potential recruits. (This might be limited to males only or perhaps include a sample of females and a sample of males in each case.) A comparison of the differences between these groups and between them and the recruiters could be exceedingly informative.

A more sophisticated approach might also be considered, in which samples might be drawn for different economic and ethnic groups of potential recruits, recent actual recruits, and actual recruits from, say, five years earlier, who would be asked not only to evaluate the consideration and decisiveness questions on the motives, but also to indicate what they perceive to be the linkages among the motives. For instance, in a study conducted some years ago by the author for the Federal Trade Commission, it was possible to isolate and map the motives of businessmen who make conglomerate merger and acquisition decisions. That is, it became possible, knowing an individual's "most important" motive, to predict his second, third, and other important motives as well. In the case of Army recruiting, knowing this pattern for

recruits might well provide a powerful tool in the recruitment process. Intuitively, of course, skilled recruiters already exploit the linkages among motives. This recommended study would crystallize this kind of awareness and make it available to all recruiters.

Appendix C

KINDS OF SCENARIOS

Because of the central role of scenarios in this study, it may be worthwhile to some readers to learn more about the nature and uses of this important technique of futures research. The term "scenario" is widely used--and misused--among planners, analysts, and decision-makers, even in the military, which presumably has used the technique itself more often than any other institution in our society. The following discussion, which is an updated version of an earlier paper by Boucher (1985), provides a new way of looking at scenarios.

Types of Scenarios

A review of earlier work makes it clear that there is not a single kind of scenario--as is commonly believed--but that there are four distinct types, the first three of which are "path through time" narratives, while the fourth depicts a "slice of time." These four are as follows:

1. The demonstration scenario. This is the original form of scenario outside of the theater and the motion picture industry, and it was pioneered by Herman Kahn, Harvey De Weerd, and others at The RAND Corporation in the early days of systems analysis. A successful and intellectually challenging example is provided by two books on World War III by General Hackett (1978, 1982), though literally hundreds of other examples have appeared in the published literature. The essence of the demonstration scenario is that the scenario-writer first imagines a particular end-state in the future and then describes a distinct and plausible path of events that could lead to that end-state. This task is creative and entirely judgmental, though of course it will usually be guided by historical data, if not by prior supplementary research. The basic purpose of such a scenario is to show that at least one such path can be devised and, hence, that the end-state could occur, and is thus worth taking seriously.

A sophisticated variation is the so-called "branch-point" scenario, in which attention is called to particularly decisive events along the path–i.e., events that represent points at which crucial choices were made (or not made), thus determining the outcome. Accordingly, these branch points, rather than the final outcome, become the object of policy attention by the user. The branch-point demonstration scenario is what Kahn and Wiener (1967) had in mind in their famous definition of scenarios as "hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision-points. They answer two kinds of questions: (1) precisely how might some hypothetical situation come about, step by step? and (2) what alternatives exist, for each actor, at each step, for preventing, diverting, or facilitating the process?"

The major weakness of the demonstration scenario is that it can be accused of being idiosyncratic–i.e., merely the function of the author's personality and habits, rather than the description of a future that could actually occur in the real world. As with all types of "genius forecasting," the probability that the genius may be a fool–or paranoid or schizophrenic–is non-zero, and can rarely be determined, even in retrospect. Herman Kahn (1982, pp. 173-178) deals best with complaints like these. He points out, for example, that the demands of writing a good scenario are such that the influence of the author's quirks are "less likely to go undetected with a scenario than with a more abstract presentation." And he has repeatedly emphasized–rightly–that the best way to look at a scenario is simply as "one of many devices useful in both stimulating and disciplining the imagination."

One particularly interesting way of exploiting this "device" is to use a demonstration scenario, or a family of them, as the basis for identifying trends and possible future events important enough to be worth including in a serious futures study, such as a Delphi like the one conducted as part of the present investigation. The aim would be to forecast and evaluate each item separately (in the context of the "most likely" future or some other clearly defined context). The results would make it very easy to reconstruct and then evaluate the original demonstration scenarios. No doubt in many cases, the originals would appear far less persuasive than they did at first. But even if the originals were cast aside because of this scrutiny, they would have been extremely valuable in helping to launch a more informative study.

2. The driving-force scenario. This is probably today's most popular type of scenario in business and governmental planning, and it is worth very careful attention. Hawken, Ogilvy, and Schwartz (1982) provide what is probably the best readily available example of this type of action. Its essence is that the scenario-writer first devises a "scenario space" by (1) identifying a set of key macro-indicators, or trends; (2) specifying at least two distinctly different levels for each such macro-indicator (e.g., "high," "most likely," and "low"); and (3) developing a matrix that interrelates each macro-indicator at each level with each other. Suppose, for example, only two macro-indicators: GNP growth and population growth. These are the "driving forces." If each is set to high, medium, and low, then there are nine possible combinations. These nine define the scenario space. Any one of the nine (e.g., high GNP growth and low population growth) specifies the context of a possible future, which is "driven" by the levels of the macro-indicators. The scenario-writer's task is to describe the future likely to be associated with, or implied by, this context, assuming that the macro-indicator levels remain constant as postulated.

The basic purposes of the driving-force scenario are to clarify the nature of the future in question and to contrast this future with others in the same scenario space. Users may find, for example, that certain actions they are considering fare equally well in most of the futures. If so, they may be encouraged to proceed, especially if they judge these futures to be more likely than the others. At the very least, they will be able to identify the futures in which their actions may be in jeopardy, and will thus know where to direct monitoring and scanning efforts.

Identification of the macro-indicators to use in defining the scenario space can be complex and time-consuming, but, in the end, the process is entirely judgmental. Typically, the process of fleshing out the futures in the scenario space is also entirely judgmental. As with demonstration scenarios, however, the work will usually be guided by experience and complementary studies, including forecasts of one sort or another. If accomplished extremely well, the resulting scenarios will satisfy another definition of "scenario," i.e., "a description of a consistent set of conditions and circumstances that defines the environment within which business will be conducted in the future" (Battelle Institute, n.d.).

Even this brief description should make it plain that the driving-force scenario, despite its widespread acceptance, is open to all of the criticisms that are made of the demonstration scenario. These criticisms should, of course, be answered in just the same way. But there are several other crucial flaws which are never mentioned by advocates of this approach, though they certainly undercut the plausibility of the final product. Perhaps the most important is the assumption that the macro-indicator levels, once specified, are fixed. In the real world, especially when long-term futures are being studied, these levels are never fixed; they obviously vary over time, given the occurrence or non-occurrence of various future events. Accordingly, driving-force scenarios are perhaps best viewed as highly abstract, idealized, and archetypal futures. Neither they nor the scenario space itself can be called "realistic" in any sense. It would seem that the principal value of well-executed driving-force scenarios is to simplify radically the analysis of strategic choice–a function that may be of considerable value at the beginning of an environmental or policy analysis, when the search for key variables is most intense and perplexing. Unfortunately, it appears that these scenarios are almost always prepared as the culmination of the analysis.

3. The system-change scenario. Unlike the demonstration scenario, which leads to a single outcome and ignores most or all of the other developments that are contemporaneous with it, and unlike the driving-force scenario, which usually takes account of the full range of future developments but assumes that the macro-indicators are immutable, the system-change scenario lets all of the chips fall when and as they may. There is no singular event that caps the scenario, and there are no a priori driving forces. The system-change scenario is the type presented in the body of this report.

The system-change scenario makes use of–indeed, integrates and synthesizes–a previously developed set of forecasted trends and events. This set, which may be developed through scanning, genius forecasting, Delphi, or some other technique, will usually embrace the full range of concerns of interest to the user–potential developments in demography, attitudes and values, institutional relationships, technology, politics and law, economics, and the like.

By itself, as indicated in this report, this set of forecasts, with associated measures of uncertainty, provides the basis for preparing the scenario here called the "most likely" future.

A model of some sort is required to develop alternative futures–i.e., to trace out a path of occurrences (and non-occurrences) of the events in the set. A description of one of these paths is a system-change scenario for an alternative future. At one extreme, the model used can be the one stored in the soft, wet computer (i.e., the unaided human brain). At the other extreme, it can be stored in a hard, dry computer (i.e., a computer simulation). Experience suggests that the best models lie somewhere in between, where there is human-machine interaction. Examples include computer-assisted games or, as in the present study, a formal cross-impact analysis. In any case, the essential activity required to produce the path that becomes the scenario consists of (a) depicting how the occurrence of a particular forecasted event would affect the probability of other events or change the nominal forecast of trends in the set, and (b) using the estimated probabilities of the forecasted events as a guide for deciding what "happens." Cross-impact analysis provides the most formal, systematic, and replicable means of generating the grist for a system-change scenario, since these two requirements are completely and explicitly met in such an analysis.

The principal developments in system-change scenarios are thus entirely data-driven, and it is impossible to tell before the model is run how a particular path will look. Yet if the previously developed set of forecasts is plausible and free of internal contradictions, and if the model computes properly, each future that emerges will be plausible and internally consistent. Moreover, it will take account of the influence of every forecasted development on every other development to which it is causally connected.

The data base and the model will not, however, determine everything that appears in the scenario. It is important to understand that what they determine is only the outline. Scenario-writers retain–and must use–great freedom to make sense of the outline, i.e., the model output, and attempt to make the scenario intriguing to the user by highlighting key branch points and elaborating on critical causal relationships. Indeed, every event in the forecasted set is necessarily a branch-point

event in the sense in which this term was used earlier when discussing the demonstration scenario. In particular system-change scenarios, however, some of these events will prove to be more decisive than others.

The basic purpose of system-change scenarios is to expose or explore systematically, comprehensively, and consistently the interrelationships and implications of the previously developed forecasts. For this reason, the system-change scenario, when successfully executed, is superior to any other kind of scenario that seeks to provide policy-relevant images of rich, complex futures. This is especially important when it comes to the development of alternative futures. An alternative that is based on a path outlined by means of an appropriate man-machine model is much less arbitrary or capricious than its alternatives, and it does not assume that any aspect of the future, other than the underlying cross-impact relationships, is immutable.

Yet the system-change scenario also has serious weaknesses, which should be recognized by users. Most important, perhaps, is an obvious truth than can easily be forgotten in the effort required by a large-scale Delphi or the razzle-dazzle of human-machine simulations: though everything that matters critically is spelled out explicitly, all of the input data and relationships are still judgmental at bottom. The processing of these inputs is no doubt better, but the structure rests entirely on a foundation that is nonetheless only the product of some kind of genius forecasting, as must be the case in all of futures research.

There are other, more technical problems as well. For example, system-change models used to develop alternative futures can define the scenario space only indirectly–typically, by specifying the upper and lower envelopes of the trend projections from the various scenarios that are run. Each trend has its own envelopes. Knowing these envelopes happens to be extremely valuable, but this information by itself provides no guidance in deciding which of the many alternative futures that can be generated should serve as the basis for writing scenarios. This choice must always be made using some criterion external to the model, such as "interest," "plausibility," or "relevance."

Problems like these do not, however, seriously diminish the relatively greater power of this approach to scenario-writing, and it is probably true that in the years ahead, system-change scenarios, which are extremely rare today, will come to be increasingly preferred by policy analysts who do their work in the spirit of futures research.

4. The slice-of-time scenario. In the popular press and some of the technical literature, this type is often what is meant by "scenario." It is illustrated most vividly by fictional works like 1984, My Petition for More Space, Brave New World, etc. Its essence in works of this sort is that it jumps to a future period in which a set of conditions is coming to fruition (or can now do so), and then describes how key stakeholders think, feel, and behave in that environment. Its purpose is to summarize a perception about the future or to show that the future may be more (or less) desirable, fearful, or attainable than is now generally thought. This type is rarely used in serious futures studies because these studies are concerned mainly with the causal process of getting from here to there, rather than with the end state itself.

There is, however, a kind of slice-of-time scenario that is often successfully used in futures research to define a *context for thinking* about specific future developments. If one imagines that the slice starts from today and can be wide--e.g., two to 2000 years--then a statement of the macro-trends over this period is, in effect, a slice-of-time scenario. The most important example is Kahn's "basic long-term multifold trend" (presented in several of his books, beginning in 1967 with The Year 2000). A popular example is Naisbitt's Megatrends (1982). It is this concept that Seyom Brown (1968, p. 300) may well have had in mind when he defined a scenario--in systems analysis--as "a statement of assumptions about the operating environment of the particular system we are analyzing."

In this sense, a slice-of-time scenario is nothing more nor less than what the textbooks and some organizations call "planning assumptions" or "environmental assumptions." The significance of this simple observation in the present context is that such a slice-of-time scenario is thus in fact often identical to the pre-set macro-indicators in the driving-force scenarios described earlier, and hence is subject to all of the same potential criticisms, plus the further objection that it does not spell out the details that would be present in a driving-force scenario.

Of course, in some organizations, these planning assumptions are actually high-level summaries of the results from earlier forecasting and scenario-writing efforts. By their signs ye may know them: an assumption that "interest rates will remain high over the next ten years" has probably been pulled out of the air (as in a driving-force scenario); an assumption that "interest rates are likely to rise over the next two years and then gradually fall to historical levels by the end of the decade" is probably a high-level generalization from earlier research.

Modes of Scenario-Writing

The four general types of scenarios have been characterized on the basis of what each says, how it says it, and some of the operations performed by the scenario-writer to achieve these results. But here, as elsewhere in futures research, it is appropriate to take account of the basic perspective being adopted by the scenario-writer as he goes about his task. These perspectives influence fundamentally the nature and proper interpretation of the product. They also add an important dimension to this new taxonomy of scenarios.

There appear to be only three major perspectives or "modes" of scenario-writing:

1. **Exploratory.** In this mode, the scenario-writer adopts a morally or ethically neutral stance toward the future, appearing to be objective, scientific, impartial. (Of course, he cannot achieve these traits, but he tries to convey the impression.) His scenario begins in the present, and unfolds from there to the end of the period of interest.

There are two important variations of this mode. In the "play out" variation, which was adopted in most of the Global 2000 report prepared for President Carter (1980), the assumption is made that only current forces and policy choices are allowed to be felt in the future–i.e., no new policies or events like scientific discoveries, revolutions, etc., are allowed to occur. In the more common "surprise free" variation, additional events, as well as new policies, are permitted, but only if they are rather

likely–i.e., if their presence would not be surprising to the reader. In either case, the writer (and the reader) appear to "discover" the resulting future as it materializes. Crudely put, the question being addressed is, "Where are we going?"

2. **Normative.** In this mode, the scenario-writer takes a moral or ethical stand on the final outcome (and perhaps on the path leading to it). The important variations in this mode are "favored and attainable" (e.g., the scenario-writer believes that racial conflict can be eliminated and then proceeds to describe a sequence of events which show how this could be achieved) and "feared but possible" (which is where almost all war outbreak scenarios are to be categorized). In either case, the question being addressed is, "What kind of future might we have?"

3. **Hypothetical.** In this mode, the scenario-writer willingly suspends disbelief in order to experiment with one or more of the ingredients in a data bank of forecasts–e.g., he jacks up the probability of some events in order of "see what might happen." He is playing a pure "what-if" game, or he is seriously exploring the sensitivity of earlier results to changes in particular assumptions. Many so-called "worst case" and "best case" scenarios are of this sort. At one extreme, for example, the analyst might let only "good" events happen. The resulting scenario, needless to say, will sometimes be incredible, but it can satisfy other important criteria for policy-relevant scenarios and, hence, be very useful in policy analysis.

Interrelating Types and Modes

In principle, it would appear that each of the four types of scenarios could be written in each of the modes. But, as shown in Fig. C1, certain of the type-mode combinations are impossible, given the definitions presented earlier. For example, it is impossible to write an exploratory demonstration scenario (see Cell 1 or 2 in Fig. C1) because the author of a demonstration scenario must know the end state in advance, but cannot in the exploratory mode. Hence, all demonstration scenarios must be normative or hypothetical. Conversely, in a system-change scenario, it is impossible to know the end state in advance. Hence, no such scenario can be written in the normative mode (Cells 13 or 14).

FIGURE C1

SCENARIO TYPE-MODE COMBINATIONS

Scenario Type	Exploratory		Normative		Hypothetical
	Play Out	Surprise Free	Desired & Attainable	Feared but Possible	
Demonstration	1	2	3	4	5
Driving Force	6	7	8	9	10
System Change	11	12	13	14	15
Slice of Time	16	17	18	19	20

= Not possible

Sixteen possibilities remain. Of these, all seem to have their advocates, except perhaps for the "play out" slice-of-time scenario (Cell 16). It is especially worth noting that, in the current business planning environment, with its focus on multiple scenario analysis and its highly self-deceptive emphasis on surrounding a "most likely" future with a "worst case" and a "best case," what is probably meant is that Cell 7 is the "most likely" scenario, Cell 8 is the "best case," and Cell 9 is the "worst case." (Since it is not difficult to imagine a situation more extreme than the conventional worst case or best case, these truly radical variations would probably end up as examples in Cell 10.) The implication, of course, is that many planners may be ignoring potentially important alternative futures. One may confidently assume, for example, that scenarios from Cell 12 will differ–perhaps radically–from the scenarios from Cell 7, yet each may be interpreted as a "most likely" future, at least in the very short run.

Equally important, there is a danger of ignoring the possible contribution to organizational strategic planning that can be made by scenarios in Cells 3 and 4. Demonstration scenarios are relatively easy to write if one has a clear idea of the end state. Certainly, no special research is necessary. What is needed is a well-informed sense of what might realistically occur (Cell 4) or be made to happen (Cell 3).

This sense of realism, which is crucial, is extraordinarily difficult to define, but its absence is manifest in many demonstration scenarios. The best examples of this failing can probably be found in national security planning, where professional analysts have long since developed the ability to think the unthinkable, but in the process seem to have lost the ability to imagine it. A credible or plausible demonstration scenario for the intentional outbreak of general nuclear war remains the most difficult of all scenarios to write, unless the audience is naive. Sophisticated professional analysts still try, since the nation's defense and billions of dollars hang on threat analyses, but if they succeed it is probably because they have ignored one or two elements of the police detective's triad of motive, means, and opportunity. (One may recall the fears that were fanned not too many years ago by the "window of vulnerability," an obvious case of failure to account well for motive.) Kaiser and Pincus (1979) provide an excellent demonstration scenario that demonstrates, among other things, the need for realism in defense analysis.

Given realism and a strong enough institutional determination, the actual "most likely" future may well lie in these areas of the taxonomy (i.e., Cells 3 and 4), which are not only the primary residence of the self-defeating and self-fulfilling prophecy, but also (and simultaneously) the home of the best futures research, which is, after all, a policy-oriented (i.e., normative) activity.

Indeed, it may be argued that the proper or most useful way to view the three types of scenarios other than the demonstration scenario is as a means of providing a context of future environmental forces for demonstration scenarios. If so, then the actual "most likely" future that planners dream to identify may, in fact, not be shown explicitly in this taxonomy. On the contrary, we may imagine that the cells are somewhat like a set of Chinese boxes, the outermost one of which may be, say, a Cell 17, the next a Cell 12, the next a Cell 8, and so on, until a Cell 3 is reached.

Kinds of Scenarios Used in This Study

As indicated by the preceding discussion, we used only two kinds of scenarios in this study.

The "most likely" future, as well as Scenarios A and B, were exploratory system-change scenarios of the surprise-free variety (i.e., these scenarios fall in Cell 12 of Fig. C1). Technically, the only difference between the "most likely" future, on the one hand, and Scenarios A and B, on the other, is that the former was outlined primarily by the model reflected in the collective judgments of the Delphi panel, while the latter were outlined by a combination of the Delphi results, the formal cross-impact model developed by the authors, and subsequent runs of the PASS system. Once the outlines were determined, the scenarios were written in precisely the same way. All were data-driven.

The second type of scenario presented in this report is embodied in Scenario E, which is a hypothetical system-change scenario (i.e., Cell 15 of Fig. C1). Technically, it differs radically from the others in that the authors, not the Delphi panel or the model, determined when the events would occur, using an arbitrary (but nonetheless

data-based) rule, as explained in Chapter 4. As such, the odds are overwhelming that no one, including the authors, would identify it as their "most likely" future. That is, if it actually occurred, it would truly be a surprise. Nevertheless, Scenario E is a possible future.

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Appendix D

FORECASTS AND FORECASTERS: ANALYSIS OF BACKGROUND VARIABLES

From time to time over the last 20 years, practitioners of futures research have attempted to determine if there is some attribute or combination of attributes describing the individual Delphi respondent that would predict his forecasting behavior. Most of this effort has been devoted to determining if self-appraised expertise or self-appraised confidence (or both) are a predictor of forecast accuracy. The evidence in answer to this question has been mixed, though it appears, on balance, that neither confidence nor expertise is a particularly strong or useful indicator.

In any event, as argued earlier in discussing the nature of the "most likely" future (Chap. 3) and the criteria that should be used when evaluating a futures study (Chap. 5), the issue of forecast accuracy is usually given far too much emphasis in futures studies that aspire to be policy-relevant. The critical issue is the usefulness of the results to a decisionmaker. In this regard, one of the more important things he would want to know concerns the possible biases of his sources of forecasts–in this case, the Delphi panelists. Another and probably more interesting question about the panelists, therefore, is whether self-appraised optimism about the future leads to forecasts that are themselves optimistic or pessimistic. More precisely: (1) Do people who are optimistic in their view of the short-term future remain so over the long-term future (e.g., the next 15 years)? (2) Do people with common backgrounds tend to have a similar view of the future? (3) Do people who are optimistic in their view of the future forecast levels of trends, probabilities of events, and impacts of events more similarly than do people who are less optimistic in their view of the future?

The Round 1 questionnaire from the Delphi study allowed us to explore these questions, because, in a special section of this questionnaire, we asked all respondents to provide some background information on themselves and to indicate their personal level of optimism about the future in general and about the chances that the Army's achievement of its recruiting mission would not be seriously hurt by external,

environmental developments. Respondents were asked to estimate their sense of optimism on a 0-10 scale over three periods–now to 1991, 1991 to 1996, and 1996 to 2001.

In effect, responses to the questions about optimism provide us with six measures: (1) the future in general from now to 1991; (2) the future in general from 1991 to 1996; (3) the future in general from 1996 to 2001; (4) the future of Army recruiting from now to 1991, (5) the future of Army recruiting from 1991 to 1996; and (6) the future of Army recruiting from 1996 to 2001.

For every time period, as one may observe in Table 1, respondents were considerably less optimistic about the future of Army recruiting than they were about the future in general. That is, respondents averaged 5.1 as their response to the future of Army recruiting, whereas they averaged 7.3 as their level of optimism about the future in general. The median estimates are even farther from each other.

Optimism Over Time

When we examine the relationship of all six of the optimism variables, we observe that all but three of the 15 possible relationships are significantly related to each other. (See Table 2.) Moreover, when we examine the relationship of optimism about the future in general and the future of Army recruiting over the three time periods, we see strong relationships of 0.6 to 0.9, with one exception, 0.4 for optimism about the future in general from now to 1991 and optimism about the future in general from 1991 to 1996. Still strong, but less so, are the relationships of the time periods for optimism about the future in general and the future of Army recruiting, with Spearman coefficients ranging from 0.40 to 0.45.

Finally, with respect to those relationships which do not obtain, we see that optimism about the near-term future in general is not related to optimism about the future of Army recruiting from 1991 to 1996 or from 1996 to 2001. Nor is there a relationship of optimism about the future in general from 1991 to 1996 and optimism about the future of Army recruiting from 1996 to 2001.

Table 1

MEANS, STANDARD DEVIATIONS, MEDIANS, RANGE AND NUMBER OF RESPONDENTS FOR OPTIMISM VARIABLES

Optimism Variables	Mean	Standard Deviation	Median	Range Minimum	Range Maximum	N
Future in General						
Now to 1991	7.4	1.5	8.0	4	10	47
1991 - 1996	7.3	1.5	7.0	4	10	47
1996 - 2001	7.2	1.7	8.0	2	10	47
Future of Army Recruiting						
Now to 1991	5.3	2.3	5.0	0	10	58
1991 - 1996	5.1	2.2	5.0	0	10	58
1996 - 2001	4.9	2.4	5.0	0	10	58

Table 2

SPEARMAN CORRELATIONS AMONG ALL OPTIMISM VARIABLES

Optimism Variables	2	3	4	5	6
Optimism About:					
Future in General					
Now to 1991	.71**	.35**	.43**	.26	.11
1991 - 1996	--	.68**	.38**	.40**	.28
1996 - 2001		--	.31*	.43**	.45**
Future of Army Recruiting					
Now to 1991			--	.76**	.60**
1991 - 1996				--	.90**
1996 - 2001					--

* $p < .05$. ** $p < .01$.

The Relationship of Background Characteristics and Optimism

As indicated earlier, we asked our Round 1 respondents a number of questions concerning their background–their age, the number of countries they had lived in, the number of years in military service, the number of years in the Army Reserve, the number of Army certificates earned, the number of languages read or spoken, the number of years served in the active Army, whether or not they were then on active duty, the number of years served as an Army recruiter, whether or not they were currently an Army recruiter, and, if so, whether or not they volunteered for recruiting duty, and whether or not they were an NCO, etc. Table 3 displays the measures of central tendency and dispersion of these characteristics of our respondent population. Table 4 presents the correlations of most of these variables with each other.

When we examine the relationship of the background characteristics of our respondents to their level of optimism about the future in general and the future of Army recruiting (Table 5 and 6), we note that for the most part these relationships do not exist. The exceptions to this conclusion are noteworthy, however. For example, although there is no relationship between the years of Army experience an individual has and his view of the near and intermediate future in general, the longer an individual has served in the Army, the less optimistically he views the long-term future in general or the long-term future of the Army recruiting as a whole. In fact, if we examine the pattern of all 78 relationships of background variables and optimism variables displayed in Tables 5 and 6 (ignoring the level of significance), 57 (73%) are negative! There appears to be a general negative relationship between the experience an individual has with the military and with recruiting and his level of pessimism about the future in general and the future of Army recruiting.

This finding raises a question. Does the extent of military service in general, or in Army recruiting in particular, affect the general relationship of the level of optimism individuals express in the short term o: the long term? We can examine this question by removing the effects of one of these variables, experience as a recruiter, from the relationships of the optimism variables with each other. When we do this, we find that the number of significant bivariate relationships falls from 12 to 8 (comparing Table 2 with Table 7). Within the "future in general" category,

Table 3

MEANS, STANDARD DEVIATIONS, RANGE AND NUMBER OF RESPONDENTS COMPLETING QUESTIONS FOR SELECTED BACKGROUND VARIABLES

Background Variable	Mean	Standard Deviation	Range		N
			Minimum	Maximum	
Age	38.9	7.1	20	61	58
Countries Lived In	1.8	1.3	0	6	58
Years Military Service	12.9	7.1	0	28	58
Years Army Reserve	1.0	3.0	0	15	56
No. of Army Certificates	6.8	6.1	0	36	57
Languages Read/Speak	0.3	0.6	0	2	58
Years Active Army	10.8	7.9	0	28	58
Years Army Recruiter	3.4	4.8	0	15	34
Currently Army Recruiter	0.3	0.4	0	1	55
Volunteered to Recruiting	0.5	0.5	0	1	45
On Action Duty	0.7	0.4	0	1	58
NCO	0.2	0.4	0	1	46
In a Brigade	0.8	0.4	0	1	62

Table 4

PEARSON CORRELATIONS AMONG SELECTED BACKGROUND VARIABLES

Background Variables	2	3	4	5	6	7	8
Age	.27*	.04	.05	.10	.17	-.13	.19
Countries Lived In	--	.36**	.04	.19	.31*	.36**	-.14
Years Military Service		--	.12	.37**	.07	.78**	.42*
Years Army Reserve			--	-.02	.25	-.18	-.11
Army Certificates				--	.05	.47**	.53**
Languages Read/Speak					--	-.12	-.12
Years Active Army						--	.46**
Years Army Recruiter							--

* $p < .05$. ** $p < .01$.

Table 5

PEARSON CORRELATIONS BETWEEN SELECTED BACKGROUND VARIABLES AND OPTIMISM VARIABLES

Backgound Variables	Optimism Variables					
	Future in General			Future of Army Recruiting		
	Now to 1991	1991-1996	1996-2001	Now to 1991	1991 1996	1996-2001
Age	-.13	-.21	-.16	.14	.07	.10
Countries Lived In	-.11	-.16	-.19	-.08	-.04	-.08
Years Military Service	-.07	-.23	-.37	-.16	-.23	-.20
Years Army Reserve	-.03	-.08	.01	.09	-.06	.01
Army Certificates	.07	-.03	-.23	-.13	-.20	-.26*
Languages Read/Speak	.00	-.01	-.02	.19	.12	.09
Years Active Army	-.09	-.14	-.29*	-.28	-.28	-.31*
Years Army Recruiter	-.07	-.25	-.46**	-.05	-.25	-.34*

Table 6

PEARSON CORRELATIONS BETWEEN SELECTED BACKGROUND VARIABLES AND OPTIMISM VARIABLES

Backgound Variables	Optimism Variables					
	Future in General			Future of Army Recruiting		
	Now to 1991	1991-1996	1996-2001	Now to 1991	1991 1996	1996-2001
Army Recruiter	.04	.10	-.14	-.18	-.15	-.23
Volunteered to Recruit	.22	-.09	-.05	.03	-.17	-.23
On Active Duty	.05	.04	-.10	-.25	-.17	-.17
NCO	-.14	-.31	-.36*	.10	-.08	-.12
In a Brigade	.09	.10	-.08	-.08	.02	-.00

* $p < .05$. ** $p < .01$.

Table 7

SPEARMAN CORRELATIONS AMONG ALL OPTIMISM VARIABLES CONTROLLING FOR EXPERIENCE AS A RECRUITER

Optimism Variables	2	3	4	5	6
Optimism About:					
Future in General					
Now to 1991	.67**	.28	.36*	.24	.05
1991 - 1996	--	.60**	.41*	.42**	.23
1996 - 2001		--	.22	.24	.20
Future of Army Recruiting					
Now to 1991			--	.80**	.74**
1991 - 1996				--	.94**
1996 - 2001					--

* $p < .05$. ** $p < .01$.

the relationship of optimism about the future in general from now to 1991 is no longer related to optimism about the future in general form 1996 to 2001. However, in the "future of Army recruiting" category, the relationships of the optimism variables over time with each other are slightly strengthened in every case.

The Relationship of Optimism and Trend Forecasts

To explore whether optimistic people tend to forecast trends similarly over time, we examined the relationship of all optimism variables and each of the 78 trends used in the cross-impact model. Although there were isolated relationships extant in the analysis, there were noteworthy patterns of relationships over time in only 10 trends–the percent of 17-21 year-olds who are strongly patriotic, the level of private corporation money for training, the level of Congressional support for the military, the perception of the stability of the strategic nuclear balance, the level of antagonism between the USSR and the PRC, the level of Army esprit de corps, the perceived effectiveness of the typical Army recruiter, and the compatibility of the values of NPS recruits and those of the Army. Although the measures of central tendency in these cases are remarkably similar, there is wide dispersion around these measures, just as one typically expects in the first round of a Delphi. This dispersion led us to use Spearman correlations instead of Pearson correlations.

Table 8 presents these patterns of relationships. For example, respondents who are optimistic about the future in general for 2000 and who are optimistic about the future of Army recruiting from now to 1990 and from 1995 to 2000, forecast a higher percentage of 17-21 year-olds who are strongly patriotic in the long run. Panelists who are pessimistic about the future of Army recruiting for all three time periods see higher levels of private corporation money for training in the near term. Respondents who are optimistic about the future of Army recruiting for the intermediate and long-term future forecast higher levels of public confidence in the ability of the Army to perform its combat mission from 1990 through 2000.

Those relationships are even stronger with respect to forecasting the level of Congressional support for the military. That is to say, respondents who are optimistic about the future of Army recruiting in all time periods tend

Table 8

SPEARMAN CORRELATIONS BETWEEN FORECASTS OF TRENDS AND OPTIMISM VARIABLES

Forecast of Trends	Optimism Variables: Future in General			Optimism Variables: Future of Army Recruiting		
	Now to 1991	1991-1996	1996-2001	Now to 1991	1991 1996	1996-2001
T2211. % of 17-21 year-olds who are strongly patriotic in:						
1986	-.09	.04	.25	.24	.18	.24
1990	-.09	.06	.30	.25	.16	.24
1995	-.01	.13	.32	.28	.20	.26
2001	.13	.26	.41*	.37*	.30	.34**
T2215. Private corporation money for training in:						
1986	-.18	.01	-.21	-.55**	-.46*	-.37*
1990	.09	.06	-.20	-.27	-.19	-.14
1995	.30	.49*	.17	-.13	-.13	-.08
2001	.31	.51*	.20	-.12	-.15	-.13
T2221. Public confidence in Army combat in:						
1986	-.30	-.12	-.11	.22	.26	.28
1990	-.16	-.09	-.12	.18	.33*	.32*
1995	-.13	-.11	-.09	.21	.43**	.40**
2001	-.02	-.07	-.16	.16	.37*	.39*

Table 8 (cont.)

SPEARMAN CORRELATIONS BETWEEN FORECASTS OF TRENDS AND OPTIMISM VARIABLES

Forecast of Trends	Optimism Variables: Future in General			Future of Army Recruiting		
	Now to 1991	1991-1996	1996-2001	Now to 1991	1991 1996	1996-2001
T5201. Level of Congressional military support in:						
1986	-.04	.27	.27	.43**	.48**	.47**
1990	.16	.09	.17	.47**	.48**	.47**
1995	.10	-.09	-.08	.41*	.44*	.45**
2001	-.01	-.22	-.26	.44*	.37*	.37*
T7103. Stability of strategic nuclear balance in:						
1986	.06	.29	.13	.26	.26	.16
1990	.19	.22	.10	.32*	.38*	.24
1995	.26	.22	.06	.26	.37*	.21
2001	.27	.15	-.01	.31	.39*	.27
T7104. USSR perception of nuclear balance stability in:						
1986	-.31	.13	.18	.12	.22	.17
1990	-.02	.23	.28	.23	.51**	.39*
1995	.01	.22	.34	.08	.41*	.28
2001	-.08	.16	.24	.08	.39*	.35

Table 8 (cont.)

SPEARMAN CORRELATIONS BETWEEN FORECASTS OF TRENDS AND OPTIMISM VARIABLES

Forecast of Trends	Optimism Variables					
	Future in General			Future of Army Recruiting		
	Now to 1991	1991-1996	1996-2001	Now to 1991	1991 1996	1996-2001
T7115. Antagonism between USSR and PRC in:						
1986	.23	.35	.53**	.14	.26	.29
1990	.04	.11	.48**	.06	.15	.18
1995	.12	.27	.43**	.20	.25	.34
2001	.08	.25	.28	.20	.22	.26
T8407. Level of Army esprit de corps in:						
1986	-.05	-.01	.05	.14	.14	.23
1990	.18	.22	.31	.26	.31*	.34**
1995	.20	.24	.29	.19	.37**	.39**
2001	.19	.23	.32	.14	.37**	.39**
T8419. Effectiveness of the typical Army recruiter in:						
1986	.16	.21	.28	.32	.29*	.29
1990	.29	.28	.37**	.35**	.39**	.37**
1995	.21	.18	.21	.32*	.36**	.34**
2001	.13	.07	.11	.30*	.29*	.32*

Table 8 (cont.)

SPEARMAN CORRELATIONS BETWEEN FORECASTS OF TRENDS AND OPTIMISM VARIABLES

Forecast of Trends	Optimism Variables					
	Future in General			Future of Army Recruiting		
	Now to 1991	1991-1996	1996-2001	Now to 1991	1991 1996	1996-2001
T8438. Compatibility NPS recruits and Army values in:						
1986	.12	.25	.18	.24	.26	.33*
1990	-.04	.12	.17	.19	.21	.31*
1995	-.07	.11	.22	.25	.28	.36*
2001	-.11	.08	.21	.28	.34	.46**

to forecast a higher level of Congressional support over all time periods. This pattern of relationships exists for only one other trend, the forecast for the level of effectiveness of the typical Army recruiter (with two exceptions–forecast of this level for 1986 by two optimism variables, the future of Army recruiting from now to 1991 and from 1995 to 2001).

Forecasts of the level of Army esprit de corps are completely unrelated to how the panelist views the future in general. However, there is a pattern of relationships of these forecasts for three periods (1990, 1995, and 2000) and the extent to which the panelists are optimistic about the future of Army recruiting in the intermediate and long-term future. That is, the more optimistic our panelists viewed the future of Army recruiting for the periods 1991-1996 and 1996-2001, the more likely they would forecast higher levels of Army esprit de corps in 1990, 1995, and 2000.

Several other striking patterns of relationships show up in our data. For example, panelists who were optimistic about the future of Army recruiting from 1991 to 1996 also tended to forecast higher levels of stability in the strategic nuclear balance and in the USSR's perception of this stability in 1990, 1995, and 2000. Panelists who were optimistic about the long-term future in general, forecast higher levels of antagonism between the USSR and the PRC in 1986, 1990, and 1995. Finally, panelists who were optimistic about the future of Army recruiting from 1996-2001 forecast higher levels of compatibility of NPS recruits and Army values throughout the periods from 1986-2001.

The Relationship of Optimism and Event Forecasts

To determine if optimistic forecasters tend to forecast the probabilities of events and their effects similarly over time, we examined the relationship of all optimism variables and each of the 30 events in the cross-impact model. Again, as with the trend set, there were isolated relationships extant throughout the analysis. However, as shown in Table 9, for four of the events in this set, there were several patterns of relationships. For example, panelists who are optimistic about the future of Army recruiting over all time periods are less negative about the impact on Army recruiting if there were major riots by the poor, than those panelists who are less

Table 9

SPEARMAN CORRELATIONS BETWEEN FORECASTS OF EVENTS AND OPTIMISM VARIABLES

Forecast of Trends	Optimism Variables: Future in General			Future of Army Recruiting		
	Now to 1991	1991-1996	1996-2001	Now to 1991	1991 1996	1996-2001
E2201. Major riots by poor occur--probability by:						
1991	-.22	-.27	-.38*	-.06	-.24	-.22
2001	-.32	-.37*	-.23	-.17	-.29	-.26
Degree of negative impact if it does occur	-.16	-.26	-.40*	-.31*	-.36*	-.32*
Degree of positive impact if it does occur	-.04	.20	.21	.04	.10	.24
E7202. Draft instituted for active ?--probability by:						
1991	.06	-.08	-.04	.07	.07	.16
2001	.07	-.07	-.09	.12	-.01	.04
Degree of negative impact if it does occur	-.25	-.38*	-.42**	-.24	-.25	-.17
Degree of positive impact if it does occur	.06	.20	.23	.14	.34*	.27*

Table 9 (cont.)

SPEARMAN CORRELATIONS BETWEEN FORECASTS OF EVENTS AND OPTIMISM VARIABLES

Forecast of Trends	Optimism Variables					
	Future in General			Future of Army Recruiting		
	Now to 1991	1991-1996	1996-2001	Now to 1991	1991 1996	1996-2001
E5107. US and USSR sign nuclear freeze agreement - probability by:						
1991	.34*	.36*	.36*	-.09	-.05	.04
2001	.30*	.34*	.37*	-.06	-.02	.09
Degree of negative impact if it does occur	.04	.04	.13	-.09	-.07	-.08
Degree of positive impact if it does occur	-.10	-.19	-.19	-.21	-.19	-.08
E7120. US in high intensity war with chemical/biological weapons - probability by:						
1991	.14	.14	.16	.38*	.31*	.43*
2001	-.09	.01	.09	.14	.12	.17
Degree of negative impact if it does occur	.22	.29	.33*	-.03	-.02	-.01
Degree of positive impact if it does occur	-.29	-.24	-.36*	-.20	-.07	-.01

optimistic about the future of Army recruiting. Panelists who are optimistic about the future in general for the intermediate and long-term are less negative about the effects of a draft being instituted for the active Army than their colleagues who are less optimistic about the future in general for these time periods. By the same token, panelists who are optimistic about the future of Army recruiting for the intermediate and long-term forecast a higher positive impact on Army recruiting if the draft is re-instituted.

Panelists who are optimistic over all time periods vis-a-vis the future in general are similar in their forecast of the probability of only one event's occurring by 1991 or by 2001–the probability that the US and the USSR will sign a nuclear freeze agreement. That is, the more optimistic our panelists, the higher the expectation that this event will occur.

Panelists who are optimistic about the future of Army recruiting over all time periods are similar in their forecast of the probability of only one event's occurring by 1991–that the US will be involved in a high-intensity war using chemical/biological weapons. That is, the more optimistic the panelists are about the future of Army recruiting, the more likely they are to expect such a war to occur by 1991. (It might be noted that, for the panel as a whole, the mean probability estimate for this event to occur by 1991 was 5.8 percent; the median estimate was 2.0 percent.)

Discussion

This analysis has several limitations. First, we used Round 1 Delphi data only. Therefore, we do not know whether the number of relationships we observed in this data set would increase or decrease, become stronger or weaker, if we had repeated the analysis after Round 2.

Moreover, the analysis was inductive in that we examined all possible relationships bearing on the questions with no stated a priori expectations. Thus, the primary value of this analysis is as a guide to further investigations. Finally, because of our inductive approach and since we did not randomly survey all forecasters, we can at best generalize our results only to the panelists who responded to the Round 1

questionnaire. Therefore, our results are only suggestive as to forecasting behavior generally.

However, we can draw some tentative conclusions on the basis of this analysis. First, the relationships of our optimism measures with each other–i.e., both for the future in general and for the future of Army recruiting–are consistent and strong, thereby providing evidence that forecasters who are optimistic in their view of the short- term future remain so over the long term.

Although our panelists were less optimistic about the future of Army recruiting than they were about the future in general, the more optimistic they were about the future in general, the more optimistic they were about the future of Army recruiting. This is an important point because it tends to underscore the value of obtaining as good an idea as possible of "the future in general"–i.e., the environment for recruiting.

Although the number of significant relationships of background variables and the optimism measures was not impressive (6 out of 78), it is noteworthy that each of these relationships is negative. That is, irrespective of the measure, the more experience individuals have, the less optimistic they are. This conclusion is strengthened by examining the signs of the relationships of all variables identified in Tables 5 and 6, whether significant or not. On the face of it, it is not clear how this finding should be interpreted vis-a-vis using experienced Army personnel in recruiting positions, for we do not know the relationship of optimism to effective recruiting behavior. Do, for example, recruiters who are more pessimistic about the future demonstrate less enthusiasm when they interact with potential recruits?

We are far less certain about the extent to which forecasters who are optimistic about the future are similar in the way in which they forecast trend levels and event probabilities over time. Although we found several consistent patterns of relationships in our trend and event set, we found substantially more non-relationships. Therefore, knowing a person's level of optimism about the future in general or the future of Army recruiting does not allow us to predict how that individual will forecast trends and events on the whole. We have identified several

patterns of forecasting for certain trends and events; it remains for future investigations to determine if these relationships remain over time.

Appendix E

THE CROSS-IMPACT MODEL

The essential idea behind a cross-impact model is to define explicitly and completely the pair-wise causal connections within a set of forecasted developments. In general, this process involves asking how the prior occurrence of a particular event might affect (i.e., "impact") other events or trends in the set. When these relationships have been specified, it becomes possible to let events "happen"–either randomly, in accordance with their estimated probability, or in some pre-arranged way–and then trace out a new, distinct, plausible, and internally consistent set of forecasts. This new set represents an alternative to the comparable forecasts in the "most likely" future. Many such alternatives can be created. Indeed, if the model is computer-based, the number will be virtually unlimited, given even a fairly small base of trends and events and a fairly short time horizon (e.g., the next ten years).

The first published reference to cross-impact analysis occurred in the late 1960's (Gordon, 1968), but the original idea for the technique dates from 1966, when the co-inventors–T. J. Gordon and Olaf Helmer–were developing the game "FUTURES" for the Kaiser Aluminum Company. In the first serious exploration of this new analytic approach, the thought was to investigate systematically the "cross correlations" among future events (and only future events) to determine, among other things, if improved probability estimates of these events could be obtained by playing out the cross-impact relationships and, more important, if it was possible to model the event-to-event interactions in a way that would be useful for purposes of policy analysis (Gordon and Hayward, 1968). The first of these objectives was soon shown to be illusory, but the second was not, and the development of improved approaches to event-to-event cross-impact analysis proceeded (Gordon et al., 1970), with most of the major technical problems being solved by the early 1970's (Enzer et al., 1971).

The next major step in the evolution of cross-impact analysis was to model the interaction of future events and trends. This refinement, first proposed by T. J. Gordon, was reduced to practice in 1971-1972 by Gordon and colleagues at The Futures Group, and was called trend impact analysis, or TIA (Gordon, 1977). Similar work was

under way elsewhere (Helmer, 1972; Boucher, 1976), but TIA became well-established, and it is still in use, despite certain obvious limitations, particularly its failure to include event-to-event interactions.

Two strands of further research then developed independently and more or less in parallel with the later stages in the creation of TIA. Each was aimed primarily at enabling cross-impact analysis to handle both event-to-event and event-to-trend interactions and to link such a cross-impact modeling capability to more conventional system models, so that developments in the latter could be made responsive to various sequences and combinations of developments in the cross-impact model. One strand led to the joining of cross-impact analysis with a system dynamics model of the sort pioneered by Jay Forrester and made famous in the first Club of Rome study (Meadows et al., 1972). This line of research–again, directed by T.J. Gordon–produced a type of cross-impact model known as probabilistic system dynamics, or PSD (Stover, 1974).

The second strand led to a cross-impact model known as INTERAX (Enzer, 1979), which has the feature that the run of a particular path can be interrupted at fixed intervals (say, one year) to allow the user to examine the developments that have already occurred and the likely course of developments over the next interval, and to intervene, if the user wishes, with particular policy actions before the run is resumed.

The original PSD and INTERAX approaches, as well as the earlier TIA approach, require the use of a mainframe. The only event-to-event and event-to-trend cross-impact model yet implemented on a personal computer is PASS, created by Thomas D. Mecca, Vice President for Planning and Development, Piedmont Technical College (Greenwood, SC) and David Summerel, Professor of Mathematics, Piedmont Technical College. Though PASS is still in beta-site development, Mr. Mecca was kind enough to allow us to use it in this project.

To define the cross-impact relationships to be investigated in the present study, the study team initially built a complete model, in which the possible connections among all of the events and trends forecasted in the Delphi portion of the inquiry were specified. Because 62 events and 113 trends were included in the Delphi, this involved developing a matrix of 3782 cells for the event-to-event section (62 x 61) and

7006 cells for the event-to-trend section (62 x 113). Estimates were made independently by the study team as to the existence of "hits" in these cells--i.e., whether the prior occurrence of a particular event might change the nominal probability of any of the other events or the nominal forecast of any of the trends. As in other complex cross-impact model-building exercises, hits occurred in about 20 percent of the cells.

At this point, the team discovered that the PASS system would indeed be available, but that PASS could handle only 30 events and three trends in a single model. The result was, first, a ruthless screening to reduce the number of events and trends as much as possible. Eventually, the number of events was cut to 28 and the trends were cut to 78, which meant that, on the events-to-trend side, 26 separate PASS models had to be constructed and run.

Even with this kind of simplification, the construction of a cross-impact model and the definition of the cross-impact relationships is tedious and demanding. In this case, the matrix for the events became 28 x 27, or 756 cells, and for the trends, 28 x 78, or 2184. Once the hits were again identified, the next step was to estimate the cross-impact factors describing the nature of the hits.

Within PASS, this is accomplished for the event-to-event section of the model simply by estimating how the nominal (i.e., forecasted) probability of a particular event would change, given the prior occurrence of an impacting event. This estimate is made in PASS on a scale that runs from -9 through +9, where "0" = "no impact." The computer programs converts each of the other points on this scale into an odds multiplier that PASS uses to compute the revised probability of an impacted event, *given the occurrence of the impacting event.* The multipliers associated with the points on the scale are as shown in the table at the top of the following page.

POSITIVE IMPACTS		NEGATIVE IMPACTS	
SCALE VALUE	ODDS MULTIPLIER	SCALE VALUE	ODDS MULTIPLIER
9	19.00	-1	0.82
8	9.00	-2	0.67
7	5.70	-3	0.54
6	4.00	-4	0.43
5	3.00	-5	0.33
4	2.30	-6	0.25
3	1.90	-7	0.18
2	1.50	-8	0.11
1	1.20	-9	0.05

The developers of PASS chose these values so that a 50 percent probable event would be changed by 5 percent, up or down, by each increment on the scale.

Estimating the cross-impact relationships in the event-to-trend portion of the model is much more complicated, in that six estimates must be made whenever there is a hit:

A. The percentage change in the nominal (Delphi) forecast of the impacted trend at that point when the impacting event will have had its maximum impact.

B. The percentage change in the nominal forecast of the impacted trend when (and if) a new, stable level is reached.

C. The length of time (in years) from the moment of occurrence of the impacting event before its effects on the forecasted level of the impacted trend will first be felt.

D. The length of time from first impact (i.e., C) until the maximum impact (i.e., A) will be achieved.

E. The length of time that the maximum impact (i.e., A) will endure.

F. The length of time from the beginning of the tendency of the impact to stabilize until the stable impact level (i.e., B) is reached.

With these cross-impact estimates, along with the nominal probability estimates of the events and the nominal projections of the trends (both from the Delphi), the

models were complete. The tables that conclude this appendix present these cross-impact factors. It is vital to note that these models were used to generate the alternative futures described in the body of the report. More precisely: they generated the outline of the alternative scenarios presented in Chap. 4, as well as the trend projections. Obviously, the quality of the estimates in the models has a powerful effect on the quality of these results. No doubt many of the estimates can be improved. The models illustrate the nature of the task.

A simulation run of each of the 26 PASS models was conducted as follows:

1. The input cumulative probability distribution for each event is used to compute annual interval probabilities–i.e., the probability that an event will occur in any year, given that it has not occurred in a prior year.

2. The occurrence of the events in the first year is decided by generating random numbers, one for each event in the model. If the first random number is equal to, or less than, the interval probability for the first event, that event is deemed to have occurred. The second random number is then used to decide the occurrence of the second event, and so on.

3. The input event values for the events affected by the events that were decided to occur in the first year (Step 2) are adjusted according to the event-to-event cross-impact estimates.

4. The input trend values for the trends affected by the event occurrences are adjusted in accordance with the event-on-trend cross-impact information.

5. Steps 2-4 are repeated for each year in the time period being covered.

As noted earlier, the result is the outline of a single future, a single path of developments over time. Such paths can be extremely instructive, not only because they integrate and provide a test of the input estimates, but also because, if the input estimates are acceptable, the resulting paths are in fact possible–i.e., they depict futures that planners and managers may actually experience. Of course, none of them is predicted to occur.

EVENTS	IMPACTED EVENTS																		
	4101	6101	2201	4202	7109	5101	7207	5107	5201	7103	7101	5106	5105	7110	7107	7106	8201	8202	5203	7204
E4101. DEPRESSION	X	+4	+5	-7	-5	+3	+3	+2	+2	+1	+3	+5	+2	+3	+7	+2		+5	+5	+8
E6101. ENERGY CRISIS	+3	X	+1	-2	+1	+1	+1	+1		-1		-2		+1	-4	+1				
E2201. RIOTS			X	-1			+1		+1							+2	+2		+3	
E9202. COAP AID + JOBS				X																-3
E7109. 15 NUKE NATIONS					X			+1			+5			+1						
E5101. NATO STATE → COM					-1	X	-4	-5	-2	-3	+2	+1	+1	+1						
E7207. SDI ABANDONED						-1	X	+4		-2	-1		-2		-1					-2
E5107. NUKE FREEZE					-2	-1	+3	X			-2		-1	-3	-1					
E5201. ANTI-MIL PRES.			-1		-1	+1	+6		X	+2	+2		-2	-3	+2			-3	+1	+1
E7103. TROOPS HOME						+2	-1			X	-1		-1	-1	+3				-2	-1
E7101. ARMS CONTROL DEAD					-1	+1	+1	+1	+1	+1	X				+3	+1				
E5106. MEXICO ⇔ COM	+6	+1			+1	+1		-1	-2	-2		X		+2		+1	+1	+7		-1
E5105. PRC & USSR TIES						+2	-7	-3	-2	-3		+1	X	+1						
E7110. U.S. AT BRINK	+1					+1	-4	-7	-6	-9	+5			X	+1	+2		+1	-9	-9
E7107. STATE TERRORISM		+1							-4	-5				+8	X	+8	+5	+8	-5	-1
E7106. NUKE PLANT HIT									-2					+3	-2	X	+6			
E8201. RA PROTECTS MIL.															-3	-8	X	-2	-1	-5
E8202. RA @ MEX BORDER												+3		+1				X	-1	-5
E5203. NATL SVC → 18's			-3	-4													-5	-7	X	+2
E7204. MIL. PAY FREEZE																			+1	X
E7205. NO BONUS				-2																
E7209. PRE-ENROLL RQD				+1																+4
E8208. ACF GONE				-3															+1	-9
E7208. # MIL. RECRUIT.																			+1	
E7210. RETIREMENT TIME																				-5
E7212. JOINT SVC ADS																				
E6103. CIVIL DISASTER	+1																	-1	+2	
E7202. RA DRAFT			-1	-1					+1		+1			+2						-9
E7113. LOSE POL. L-I WAR						-2	-3		+4	-5	+4			+3	+3	+2			-9	-9
E7120. NI-I WAR / C-B	+8				+1	+2	-4	-5	-9	-9	+9	+5		+9	-9	-9			-9	-9

EVENTS	IMPACTED EVENTS									
	7205	7209	8208	7208	7210	7212	6103	7202	7113	7120
E4101. DEPRESSION	+7		+5	+4	+6			-5		+4
E6101. ENERGY CRISIS										
E2201. RIOTS							+7			
E9202. COMP AID + JOBS	-5		-6	-1	-1			+1		
E7109. 15 NUKE NATIONS										+3
E5101. NATO STATE → COM										
E7207. SDI ABANDONED	-1									-5
E5107. NUKE FREEZE										-2
E5201. ANTI-MIL PRES.	+3			+1	+2	+1		-6	-7	-9
E7103, TROOPS HOME										-2
E7101. ARMS CONTROL DEMO									-1	-1
E5106. MEXICO → COM	-1		-1		+2			+1		
E5105. PRC & USSR TIES										+1
E7110. U.S. AT BRINK	-2		-1					+1	-9	+5
E7107. STATE TERRORISM	-4						+8			+7
E7106. NUKE PLANT HIT							+6		+2	
E8201. RA PROTECTS VITL.	-7			-2		-1		+1		
E8202. RA @ MEX BORDER	-7			-2		-1		+2		
E5203. NATL SVC → 18's	+5		+1	+5	+5	+3		-7		
E7204. MIL. PAY FREEZE			+4	-9	+3	+2				
E7205. NO BONUS	X		+7	-2	+1	+2				
E7209. PRE-ENROLL RQD		X	-6							
E8208. ACF GONE	+5	-9	X	-9	+5	+6		+4		
E7208. # MIL. RECRUIT.	-2		-5	X	-1	-2		+1		
E7210. RETIREMENT TIME	-5		-1	-3	X			+1		
E7212. JOINT SVC ADS	+1		+2			X				
E6103. CIVIL DISASTER							X			
E7202. RA DRAFT	+9		+4	+8	+4	-5		X		
E7113. LOSE POP. L-I WAR	-1		-1	-5	-1			+1	X	+3
E7120. NI-I WAR / C-B	-9		-9	-9	-9			+6	-9	X

EVENTS	T4201. % GROWTH IN GNP						T4202. RATE OF INFLATION						T4203. FEDERAL DEBT $					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-300	0	0	1	1	5	-80	0	0	1	3	3	+25	0	0	3	0	3
E6101. ENERGY CRISIS	-33	0	0	1	1	1	+20	0	0	1	2	1						
E2201. RIOTS	-3	0	0	0	1	0							+1	0	0	0	1	0
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED													-1	-1	0	1	0	0
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT													-1	+1	0	2	1	1
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT	-5	0	0	0	1	0	+10	0	0	0	1	0						
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	+20	+15	1	4	0	0							+1	0	0	1	2	1
E7204. MILITARY PAY FREEZE													-1	-1	0	1	0	0
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.													-2	-2	0	1	0	0
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER	-20	0	0	0	2	0	+20	0	0	0	2	0	+1	0	0	0	2	0
E7202. RA DRAFT																		
E7113. U.S. LOSE POP L-1 WAR	+25	0	0	1	2	2	+100	0	0	1	2	2	+1	0	0	1	2	2
E7120. HI-1 WAR W/C-13	+50	0	0	2	2	3	+200	0	0	2	2	3	+3	0	0	2	2	3

EVENTS	T4217. % UNEMPLOYMENT						T4218. % UNEMPLOYMENT FOR 17-21 (TOTAL)						T4219. % UNEMPLOYMENT FOR 17-21 HISPANIC					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+175	0	0	1	3	3	+100	0	0	1	3	3	+50	0	0	1	3	3
E6101. ENERGY CRISIS	+10	0	0	1	1	1	+10	0	0	1	1	1	+15	0	0	1	1	1
E2201. RIOTS	+1	0	0	0	1	0	+2	0	0	0	1	0	+4	0	0	0	1	0
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	-10	0	1	2	0	1	-8	0	1	2	0	1	-4	0	1	2	0	1
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	-20	-20	1	4	0	0	-90	-90	1	4	0	0	-90	-90	1	4	0	0
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER	+5	0	0	0	2	0	+10	0	0	0	2	0	+10	0	0	0	2	0
E7202. RA DRAFT	-5	-5	0	1	0	0	-10	-10	0	1	0	0	-5	-5	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR	-2	0	0	1	2	2	-10	0	0	1	2	2	-10	0	0	1	2	2
E7120. HI-1 WAR W/C-13	-10	0	0	2	2	3	-5	0	0	2	2	3	-10	0	0	2	2	3

EVENTS	T4220. % UNEMPLOYMENT FOR 17-21 BLACKS						T4223. MEDIAN INCOME OF HOUSEHOLDERS 15-24						T4222. % NEW JOBS REQ COMPUTER SKILLS					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+50	0	0	1	3	3	-20	0	0	1	3	3	-20	0	0	1	3	3
E6101. ENERGY CRISIS	+20	0	0	1	1	1	-10	0	0	1	1	1						
E2201. RIOTS	+10	0	0	0	1	0												
E4202. COOP AID TIED TO JOBS													+10	+5	1	1	0	3
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	-4	0	1	2	0	1	+5	0	1	2	0	1						
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	-20	-20	1	2	0	0	+10	+10	1	4	0	0	+20	+20	1	4	0	0
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER	+10	0	0	0	2	0												
E7202. RA DRAFT	-5	-5	0	1	0	0												
E7113. U.S. LOSE POP L-1 WAR	-10	0	0	1	2	2	+5	0	0	1	2	2						
E7120. HI-1 WAR W/C-13	-10	0	0	2	2	3	+5	0	0	2	2	3						

EVENTS	T4207. % OVERQUALIFIED COLLEGE GRADS						T2216. % POP. OPTIMISTIC ABOUT NEXT 5 YRS						T4206. % FAMILIES WITH 2 INCOMES					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+100	0	0	1	3	3	-90	0	0	1	3	6	-50	0	0	1	3	3
E6101. ENERGY CRISIS							-25	0	0	1	0	0	-10	0	0	1	1	1
E2201. RIOTS							-15	0	0	0	1	0						
E4202. CORP AID TIED TO JOBS							+1	0	0	0	1	0						
E7109. 15 NUKE NATIONS							-20	-10	0	0	2	5						
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE							+20	+5	0	0	1	3						
E5202. ANTI-MIL PRESIDENT							+30	+2	0	0	1	3						
E7103. U.S. TROOPS HOME							+10	0	0	1	0	0						
E7101. ARMS CONTROL DEMO							-15	0	0	0	1	0						
E5106. MEXICO → COM							-15	-10	0	0	2	3						
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.							-10	0	0	0	1	1						
E7206. NUKE PLANT HIT							-25	0	0	0	1	0						
E8201. ARMY PROTECTS UTILITIES							+5	0	0	0	1	0						
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	-10	-2	0	2	2	2	+20	+10	0	1	3	3						
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC YRS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT																		
E7113. U.S. LOSE POP L-1 WAR	-10	0	0	1	2	2	-30	0	0	1	2	2						
E7120. HI-1 WAR W/C-13	-40	0	0	2	2	3	-70	0	0	2	1	4	+10	+2	0	2	2	3

EVENTS	T1213. BIRTHS TO ≥ 30 YRS AS % OF ALL						T1212. BIRTHS TO ≤ 19 YRS AS % OF ALL						T2210. PUBLIC TOLERANCE LIFESTYLE DIVERSITY					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-20	0	0	1	3	3	-20	0	0	1	3	3	-25	0	0	1	3	6
E6101. ENERGY CRISIS																		
E2201. RIOTS													-30	-10	0	0	1	2
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		.
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT													+10	+2	0	2	1	0
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.													-15	-5	0	0	2	1
E7206. NUKE PLANT HIT													-10	-2	0	0	1	1
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's							-20	-40	0	1	0	0	-30	-5	0	2	2	5
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT																		
E7113. U.S. LOSE POP L-1 WAR													-20	-3	0	1	2	2
E7120. HI-1 WAR W/C-13							-10	0	0	2	2	3	-50	-10	0	2	2	3

EVENTS	T2209. % ADULTS ACCEPTING TRAD VALUES						T1209. FAMILIES AS % OF HOUSEHOLDS						T1211. % SINGLE-PARENT FAMILIES W/KIDS					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+40	+15	0	1	4	7	+15	0	0	1	3	3	-40	0	0	3	2	3
E6101. ENERGY CRISIS	+20	0	0	0	1	0	+1	0	0	1	1	0						
E2201. RIOTS	+15	+3	0	0	1	1												
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS	+10	+1	0	2	1	3												
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT																		
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.	+15	+2	0	0	2	1												
E7206. NUKE PLANT HIT	+20	+5	0	0	2	1												
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	+25	+15	0	3	5	0	+5	+5	0	1	0	0						
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT																		
E7113. U.S. LOSE POP L-1 WAR	-10	+5	0	2	0	5												
E7120. HI-1 WAR W/C-13	+15	+5	0	3	2	5	+2	0	0	1	4	0						

EVENTS	T4225. % FAMILIES BELOW POVERTY						T4226. % KIDS < 16 YRS IN POVERTY						T2212. EMOTIONAL MATURITY OF 16 YR OLDS					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+60	+5	0	1	3	3	+70	+10	0	1	3	3	+30	0	0	1	3	10
E6101. ENERGY CRISIS	+3	0	0	1	0	1	+6	0	0	1	0	1	+5	0	0	1	0	1
E2201. RIOTS													+10	0	0	0	1	0
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS													+5	0	0	0	1	4
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	-10	-1	0	2	2	3	-10	-1	0	2	2	3						
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK													+15	+2	0	0	1	3
E7107. STATE TERRORISM, U.S.													+10	+1	0	1	1	2
E7206. NUKE PLANT HIT													+15	+2	0	0	1	3
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's													+15	+10	0	3	2	10
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER													+10	+2	0	0	1	3
E7202. RA DRAFT													+10	+10	0	3	2	10
E7113. U.S. LOSE POP L-1 WAR													+15	+2	0	2	2	5
E7120. HI-1 WAR W/C-13													+20	+15	0	1	3	10

EVENTS	T2211. % 17-21 WHO ARE STRONGLY PATRIOTIC						T2438. COMPATIBILITY OF NPS & ARMY VALUES						T5202. CLOUT OF ELDERS W/NATL POLITICS					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+21	+3	0	3	1	4	+5	+3	0	2	3	4	+7	+4	0	2	1	4
E6101. ENERGY CRISIS	+6	0	0	1	1	3	+3	+1	0	0	1	0	+5	+1	0	1	1	3
E2201. RIOTS	+6	0	0	0	0	1							+7	+4	0	1	1	1
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS	+3	0	0	1	1	1	+1	0	0	1	1	1						
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	-9	-1	0	3	1	3							+9	+3	0	3	1	6
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO	-6	-1	0	0	1	3	-3	0	0	0	1	3	+2	0	0	0	1	0
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES	+6	+1	0	0	2	4												
E7110. U.S. AT BRINK	+9	+3	0	0	1	4	+4	+1	0	0	1	4	-9	0	0	0	1	0
E7107. STATE TERRORISM, U.S.	+6	+3	0	1	1	0	+3	+1	0	1	1	4						
E7206. NUKE PLANT HIT	+9	+1	0	0	1	4	+4	+1	0	0	1	4						
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	+3	+3	0	0	0	0	+6	+4	0	2	1	10	+17	+5	0	2	0	10
E7204. MILITARY PAY FREEZE							+5	+5	0	1	0	0						
E7205. NO ENLISTMENT BONUS							+3	+3	0	1	0	0						
E7209. PRE-ENROLLMENT RQD							+1	+1	0	1	0	0						
E8208. ACF GONE							+10	+10	0	1	0	0						
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER													+7	0	0	2	0	0
E7202. RA DRAFT	-3	0	0	2	0	0	-3	-3	0	0	0	0						
E7113. U.S. LOSE POP L-1 WAR	-6	-1	0	1	2	5	+3	0	0	1	2	5	+7	0	0	3	0	0
E7120. HI-1 WAR W/C-13	+9	0	0	2	0	10	+6	+3	0	2	0	10	+3	0	0	2	2	3

EVENTS	T2201. QUAL OF PUBLIC SCHOOLS						T3201. % H.S. KIDS TRAINED ON MICABS						T2203. % KIDS NOT GRAD FROM H.S.					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-10	0	0	1	3	3	-20	+10	0	1	3	3	+20	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT																		
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's													-10	-2	0	2	3	3
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT																		
E7113. U.S. LOSE POP L-1 WAR																		
E7120. HI-1 WAR W/C-13													-10	0	0	2	2	3

EVENTS	T2202. % 17-21 FUNCTIONALLY ILLITERATE						T2215. PRIVATE CORP $ ON TRAINING						T2204. % HSG SOON IN COLLEGE					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+15	0	0	3	2	2	-70	0	0	1	3	3	-50	0	0	1	3	3
E6101. ENERGY CRISIS							-10	0	0	1	1	1						
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS							-5	0	0	1	3	5	+5	+2	0	2	4	6
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT																		
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's							-20	-10	0	3	1	10	-80	-50	0	3	0	4
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT													-10	-10	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR													+2	0	0	1	2	2
E7120. HI-1 WAR W/C-13													+15	0	0	2	2	3

EVENTS	T2205. % MINORITY YOUTH TO COLLEGE						T7105. ANTAG. WARSAW PACT → NATO						T7106. ANTAG. USSR → U.S.					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-50	0	0	1	3	3	+20	0	0	1	3	3	+20	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS	+5	+3	0	2	2	4												
E7109. 15 NUKE NATIONS							-15	-10	0	1	3	5	-15	-10	0	1	3	5
E5101. NATO STATE → COM							+10	0	0	0	1	5	+10	0	0	0	1	5
E7207. SDI ABANDONED							-10	-5	0	0	2	5	-30	-5	0	0	2	5
E5107. NUKE FREEZE							-10	0	0	1	0	0	-25	0	0	1	0	0
E5202. ANTI-MIL PRESIDENT							-10	0	0	2	4	1	-15	0	0	2	4	1
E7103. U.S. TROOPS HOME							-10	0	0	1	2	1	-20	0	0	1	2	1
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM													+20	+10	0	1	3	5
E5105. PRC & USSR TIES							+20	+10	0	0	2	5	+20	+10	0	0	2	5
E7110. U.S. AT BRINK							+80	+5	0	0	1	2	+80	+10	0	0	1	5
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	-20	-50	0	3	3	8												
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT	-10	-10	0	1	0	0												
E7113. U.S. LOSE POP L-1 WAR	+4	0	0	1	2	2	+10	0	0	1	2	3	+10	0	0	1	2	3
E7126. HI-1 WAR W/C-13	+10	0	0	2	2	3	+20	+5	0	2	2	5	+25	+5	0	2	2	5

EVENTS	T7101. USSR LAND COMBAT STRENGTH						T7103. STABILITY OF STRAT NUKE BALANCE						T7104. USSR PERCEPTION OF STRAT NUKE BALANCE					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+10	0	0	1	3	3	-10	0	0	1	3	3	-15	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS							-50	-25	0	1	1	5	-50	-25	0	1	1	5
E5101. NATO STATE → COM	+15	0	0	0	2	0												
E7207. SDI ABANDONED							+40	+10	0	1	1	2	+50	+10	0	1	1	2
E5107. NUKE FREEZE							+20	+2	0	0	1	0	+20	+2	0	0	1	0
E5202. ANTI-MIL PRESIDENT							+5	+5	0	1	0	0	+10	+5	0	1	0	3
E7103. U.S. TROOPS HOME	+10	0	0	0	1	0	+10	+5	0	2	2	1	+10	+5	0	2	2	1
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM							-10	-3	0	1	1	2						
E5105. PRC & USSR TIES							-10	-5	0	2	1	5	+20	+10	0	2	1	5
E7110. U.S. AT BRINK							-50	0	0	0	1	0	-50	0	0	0	1	0
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's																		
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT																		
E7113. U.S. LOSE POP L-1 WAR							-5	0	0	1	2	2	-5	0	0	1	2	2
E7120. HI-1 WAR W/C-13							-75	0	0	1	3	3	-50	-10	0	1	3	3

EVENTS	PUBLIC PERCEPTION OF T2220. STRAT NUKE BAL						% U.S. HS SENIORS T2217. SEEING NUKE WAR						POP. SUPPORT OF T2224. MILITARY DEFENSE					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-4	0	0	2	1	4	+2	0	0	2	1	4	-25	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS	-10	-4	0	1	2	0	+6	+4	0	1	2	0	+2	+1	0	1	2	0
E5101. NATO STATE → COM							+4	0	0	0	1	0	+1	0	0	1	0	0
E7207. SDI ABANDONED	+4	+1	0	0	2	0	-4	0	0	0	1	3	-10	+1	0	1	1	0
E5107. NUKE FREEZE	+16	+2	0	0	1	0	-12	-2	0	0	1	0						
E5207. ANTI-MIL PRESIDENT	+8	+2	0	1	2	1	-6	-2	0	1	2	1	-15	-2	0	1	2	1
E7103. U.S. TROOPS HOME	+2	0	0	1	0	0	-8	0	0	1	0	0	+1	0	0	1	0	0
E7101. ARMS CONTROL DEMO	-6	-2	0	0	1	0	+6	+1	0	0	1	0	-20	0	0	0	1	0
E5106. MEXICO → COM	-8	-2	0	1	1	2	+4	+1	0	1	1	2	+5	+1	0	1	1	2
E5105. PRC & USSR TIES	-8	-4	0	2	1	5	+2	+1	0	2	1	5	+4	+2	0	2	1	5
E7110. U.S. AT BRINK	-30	-2	0	0	1	3	+12	+2	0	0	1	3	+9	+1	0	0	1	3
E7107. STATE TERRORISM, U.S.													+4	+1	0	0	2	0
E7206. NUKE PLANT HIT							+2	0	0	1	1	0	+7	+1	0	0	1	1
E8201. ARMY PROTECTS UTILITIES													+3	+1	0	1	2	4
E8202. ARMY @ MEX BORDER													+5	+2	0	0	2	4
E5203. NATL SVC FOR 18's													-10	0	0	1	1	0
E7204. MILITARY PAY FREEZE													+1	0	0	1	1	0
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT													+1	0	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR	-4	0	0	1	2	2	+4	0	0	1	2	2	+1	-10	0	0	2	6
E7120. HI-1 WAR W/C-13	-36	+2	0	2	2	5	+18	+2	0	2	2	5	+8	-35	0	2	2	5

EVENTS	T5201. CONGRESSIONAL MIL. SUPPORT						T7202. DOD AS % OF GNP						T2222. AVG. CONF IN ARMY COMBAT ABILITY					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-25	0	0	1	3	3	-15	0	0	1	3	3						
E6101. ENERGY CRISIS							+10	0	0	1	0	0						
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS	+10	+5	0	1	2	1	+10	+1	0	1	2	1	+5	0	0	0	1	0
E5101. NATO STATE → COM	+10	0	0	2	0	1	+5	0	0	2	0	1						
E7207. SDI ABANDONED	+10	+5	0	0	2	0	-10	+2	0	1	1	3						
E5107. NUKE FREEZE	+5	0	0	1	0	0												
E5202. ANTI-MIL PRESIDENT	-10	-5	0	2	1	1	-15	-10	0	2	1	1						
E7103. U.S. TROOPS HOME	+2	0	0	1	1	0	-10	0	0	1	1	0	-10	0	0	1	0	0
E7101. ARMS CONTROL DEMO	-5	0	0	1	1	0							-10	-2	0	1	0	0
E5106. MEXICO → COM	+5	+2	0	1	2	2	+10	+2	0	1	2	2						
E5105. PRC & USSR TIES	+15	+10	0	1	1	1	+20	+5	0	1	1	1	-20	-10	0	0	1	1
E7110. U.S. AT BRINK	+25	0	0	1	1	0												
E7107. STATE TERRORISM, U.S.	+10	+5	0	1	1	0												
E7206. NUKE PLANT HIT	+5	+2	0	0	1	0												
E8201. ARMY PROTECTS UTILITIES	+5	+2	0	0	1	1							+15	0	0	0	1	0
E8202. ARMY @ MEX BORDER	+20	+10	0	0	2	4							+20	+10	0	0	1	0
E5203. NATL SVC FOR 18's	-20	-5	0	1	3	5	-10	0	0	3	2	3						
E7204. MILITARY PAY FREEZE	+2	0	0	0	1	0	-10	-10	0	0	0	0						
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.							-5	-5	0	1	1	0						
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER							-5	0	0	0	1	1						
E7202. RA DRAFT	+5	+2	0	1	1	0							-5	0	0	0	1	0
E7113. U.S. LOSE POP L-1 WAR	+15	-10	0	1	2	2	+10	0	0	1	2	2	+25	-30	0	0	1	0
E7120. HI-1 WAR W/C-13	+30	-25	0	2	2	3	+80	0	0	2	2	3	+25	-10	0	2	2	3

EVENTS	T8408. ARMY MODERNIZATION						T8407. ARMY ESPRIT DE CORPS						T7107. ANTAG. U.S. → PRC					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-20	0	0	2	3	2	+20	0	0	1	3	3	+5	0	0	1	1	0
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS	+5	0	0	1	3	1	+20	+5	0	0	1	0						
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	-5	0	0	2	1	1	-30	0	0	2	1	1	-15	-5	0	2	1	1
E7103. U.S. TROOPS HOME	+5	0	0	1	3	1	-20	-5	0	0	1	5	-5	-5	0	0	0	0
E7101. ARMS CONTROL DEMO							-10	0	0	0	1	0						
E5106. MEXICO → COM	+10	+10	0	2	2	3	+10	+2	0	2	2	3						
E5105. PRC & USSR TIES	+15	+10	0	1	3	1	+10	0	0	0	1	0	+20	+15	0	2	2	3
E7110. U.S. AT BRINK							+25	0	0	0	1	0	+10	+2	0	0	1	0
E7107. STATE TERRORISM, U.S.							+10	+5	0	2	1	0						
E7206. NUKE PLANT HIT							+10	+2	0	0	1	0						
E8201. ARMY PROTECTS UTILITIES							-15	-5	0	0	1	0						
E8202. ARMY @ MEX BORDER							-10	-5	0	0	1	0						
E5203. NATL SVC FOR 18's																		
E7204. MILITARY PAY FREEZE							-40	-20	0	0	1	5						
E7205. NO ENLISTMENT BONUS							-5	-1	0	0	1	3						
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.							-25	-5	0	2	1	0						
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT							-20	-10	0	1	2	2						
E7113. U.S. LOSE POP L-1 WAR	+5	0	0	3	1	1	-20	-5	0	3	1	7						
E7120. HI-1 WAR W/C-13	+25	+10	0	3	2	2	+40	-10	0	0	1	2	-10	0	0	1	2	2

EVENTS	T7108. ANTAG. ISRAEL → MID EAST						T7114. ANTAG. MID-EAST → MID-EAST						T7110. ANTAG N. KOREA → S. KOREA					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	+5	+2	0	1	3	3	+4	+1	0	1	3	3	+5	+2	0	1	3	3
E6101. ENERGY CRISIS	+5	0	0	1	1	1	+7	+2	0	1	1	1						
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS	+2	+1	0	0	1	5	+2	+1	0	0	1	5						
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	+10	0	0	2	1	1							+5	0	0	2	1	1
E7103. U.S. TROOPS HOME	+5	+2	0	1	2	3							+20	+10	0	1	2	3
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES													+5	+2	0	1	2	4
E7110. U.S. AT BRINK													+5	0	0	0	1	0
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's																		
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT																		
E7113. U.S. LOSE POP L-I WAR																		
E7120. HI-I WAR W/C-13	+15	+5	0	2	2	5	-90	+5	0	2	2	5						

EVENTS	T7111. ANTAG. NICARAGUA → CA NEIGHBORS						T7109. ANTAG. INDIA → PAKISTAN						T7112. ANTAG. PRC → TAIWAN					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-20	0	0	1	3	3	+36	+5	0	1	3	5	+10	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS							+22	+10	0	1	1	0						
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	-10	-10	0	2	1	1												
E7103. U.S. TROOPS HOME	-20	-10	0	2	1	1							-20	-2	0	2	1	1
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM	+10	+10	0	0	2	5												
E5105. PRC & USSR TIES													+10	0	0	1	0	5
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's																		
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT																		
E7113. U.S. LOSE POP L-I WAR																		
E7128. HI-I WAR W/C-13																		

EVENTS	T7115. ANTAG. USSR→PRC						T7201. TERRORIST INCIDENTS ON AMERICANS						T8401. ARMY BUDGET ($)					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-20	-10	0	1	3	5	+10	0	0	1	1	0	-20	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS							+10	0	0	1	0	0	+10	0	0	1	0	0
E5101. NATO STATE→COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT							-5	0	0	1	1	0	-10	0	0	2	1	1
E7103. U.S. TROOPS HOME							-20	-10	0	2	1	1	-5	0	0	2	1	1
E7101. ARMS CONTROL DEMO							+10	0	0	1	0	0						
E5106. MEXICO→COM													+15	+5	0	2	1	4
E5105. PRC & USSR TIES	-95	-95	0	1	0	0							+10	+5	0	2	2	5
E7110. U.S. AT BRINK	-30	-10	0	0	1	0	+15	0	0	1	0	0	+5	0	0	1	0	0
E7107. STATE TERRORISM, U.S.							+20	+10	0	1	1	0						
E7206. NUKE PLANT HIT							+5	+2	0	1	0	0						
E8201. ARMY PROTECTS UTILITIES							-10	0	0	1	1	1						
E8202. ARMY @ MEX BORDER							+10	+5	0	1	2	4						
E5203. NATL SVC FOR 18's																		
E7204. MILITARY PAY FREEZE													-10	-5	0	1	2	4
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE													-1	0	0	1	2	4
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.													-10	-5	0	1	2	4
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT													+10	+6	0	2	4	4
E7113. U.S. LOSE POP L-1 WAR							+10	0	0	1	2	2	+10	0	0	1	2	4
E7120. HI-1 WAR W/C-13	-10	-2	0	2	2	3	+10	0	0	2	2	3	+30	0	0	2	2	5

EVENTS	T8402. RECRUIT # AS % OF ARMY BUDGET						T8403. AD # AS % OF RECRUIT BUDGET						T8404. EFFECTIVENESS OF ARMY ADS					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-35	0	0	1	3	3	-70	0	0	1	3	3	+50	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS	+5	0	0	1	1	1	+5	0	0	1	1	1	-10	0	0	1	1	1
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	+5	0	0	2	1	1												
E7103. U.S. TROOPS HOME													-10	0	0	1	3	2
E7101. ARMS CONTROL DEMO													-5	0	0	1	1	1
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK													-15	0	0	1	1	0
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES													-30	-10	0	1	2	3
E8202. ARMY @ MEX BORDER													-15	-2	0	1	2	4
E5203. NATL SVC FOR 18's	+10	+10	0	1	0	0	+20	+10	0	1	3	4	-30	-5	0	1	3	4
E7204. MILITARY PAY FREEZE	+20	+5	0	1	3	5	+10	+2	0	1	3	5	-50	-10	0	1	3	5
E7205. NO ENLISTMENT BONUS	-5	0	0	1	2	0	+5	0	0	1	2	0	-5	0	0	1	2	0
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE	-15	-5	0	1	3	5	+10	0	0	1	2	2	-30	-10	0	1	3	5
E7208. LID ON # MIL. RECRUIT.	-10	-2	0	1	1	1	+50	+20	0	1	1	5	130	+10	0	1	0	5
E7210. TIME UPPED FOR RETIRE.	+10	0	0	1	1	1	+10	0	0	1	1	1	-15	0	0	1	1	2
E7212. JOINT SVC ADS RQD							-50	-50	0	2	0	0	-50	-10	0	2	0	0
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT	-85	-70	0	2	1	1	-90	-60	0	2	1	1	-50	0	0	1	1	1
E7113. U.S. LOSE POP L-1 WAR	+3	0	0	1	2	2							-20	0	0	1	2	2
E7120. HI-1 WAR W/C-13	-20	0	0	2	2	4	+15	0	0	2	2	3	-30	0	0	2	2	3

EVENTS	T8423. CONTRACT MISSION						T8406. E-1 PAY AS % OF CIVILIAN PAY						T8422. VALUE OF ED BENEFITS → ENLIST					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION							-10	0	0	1	3	3	+8	+3	0	2	0	0
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS													-15	-2	0	2	2	2
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5201. ANTI-MIL PRESIDENT	-5	0	0	2	1	1												
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM	+10	+4	0	2	3	2												
E5105. PRC & USSR TIES	+20	+4	0	2	4	5												
E7110. U.S. AT BRINK													-20	0	0	1	0	0
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES													+2	+1	0	1	2	2
E8202. ARMY @ MEX BORDER													+5	+2	0	1	2	5
E5203. NATL SVC FOR 18's							+10	0	0	2	0	1	+10	+10	0	1	0	0
E7204. MILITARY PAY FREEZE							-15	-10	0	2	0	5	+20	+20	0	2	0	0
E7205. NO ENLISTMENT BONUS													+2	0	0	2	1	1
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE													-90	-90	0	2	0	0
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.	-10	0	0	3	1	6							+3	+3	0	2	0	0
E7212. JOINT SVC ADS RQD													-25	-25	0	2	0	0
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT													-10	-10	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR	+5	0	0	1	2	2							+14	0	0	1	2	2
E7120. HI-1 WAR W/C-13	+20	0	0	2	2	3							+10	0	0	2	2	3

EVENTS	T8424. COMP. PRIV. SECTOR FOR HSG						T8426. COMP. OTHER SVCS FOR HSG						T8425. COMP. PRIV. SECTOR FOR COLLEGE GRADS					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-50	0	0	1	3	3	-50	0	0	1	3	3	-70	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS	+20	+5	0	1	1	2	+5	0	0	1	1	2	+10	+5	0	1	1	2
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	+10	0	0	2	1	1							+10	0	0	2	1	1
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO	+15	+5	0	1	0	0							+5	0	0	1	0	0
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES	+5	0	0	0	1	0	+5	0	0	0	1	0						
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES	+20	+10	0	2	2	1	+5	+3	0	2	2	1	+20	+10	0	2	2	1
E8202. ARMY @ MEX BORDER	+10	+5	0	2	2	1	+20	+5	0	2	2	1	+10	+5	0	2	2	1
E5203. NATL SVC FOR 18's	-70	-70	0	1	0	0							+40	+25	0	2	1	1
E7204. MILITARY PAY FREEZE	+5	+5	0	1	0	0							+15	+15	0	1	0	0
E7205. NO ENLISTMENT BONUS	+15	+5	0	1	1	0							+5	0	0	1	1	0
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE	+5	+5	0	1	0	0	+5	+5	0	1	0	0						
E7208. LID ON # MIL. RECRUIT.	+10	+5	0	2	0	0	+5	+5	0	2	0	0	+10	+5	0	2	0	0
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD							+5	0	0	1	0	0						
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT	-90	-90	0	1	0	0	-40	-40	0	1	0	0	-90	-90	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR	+80	0	0	1	2	2							+100	0	0	1	2	2
E7120. HI-1 WAR W/C-13	+20	0	0	2	2	4	+15	0	0	2	2	4	+15	0	0	2	2	4

EVENTS	T8427. COMP OTHER SVCS FOR COLLEGE GRADS						T8410. USAR/NG AS % OF ACTIVE ARMY						T8430. MEDIAN AGE OF NPS RECRUITS					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-70	0	0	1	3	3							-10	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS	+25	+5	0	1	1	2												
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT																		
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES	+15	+5	0	2	2	1												
E8202. ARMY @ MEX BORDER	+5	+1	0	2	2	1												
E5203. NATL SVC FOR 18's							-10	-10	0	1	0	0						
E7204. MILITARY PAY FREEZE																		
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.	+20	+10	0	2	0	0												
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD	+30	+20	0	1	0	0												
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT	-20	-20	0	1	0	0							-10	-10	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR													+5	0	0	1	2	2
E7120. HI-1 WAR W/C-13	+50	0	0	2	2	4	-20	0	0	2	2	3	+5	0	0	2	2	4

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EVENTS	T8431. % OF NPS RECRUITS >21						T8432. AV AFQT SCORE						T8433. AV AFQT SCORE FOR I, II, + IIIA					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-20	0	0	1	3	3	+5	0	0	1	3	3	+5	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT																		
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's							-10	-10	0	2	0	0	-10	-10	0	2	0	0
E7204. MILITARY PAY FREEZE							-10	-10	0	1	0	0	-20	-10	0	1	1	1
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT	-10	-10	0	1	0	0	-10	-10	0	1	0	0	-10	-10	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR	+10	0	0	1	2	2												
E7120. HI-1 WAR W/C-13	+10	0	0	2	2	3												

EVENTS	T8435. % RECRUITS ED. DEFICIENT						T8409. % ARMY JOBS R&R COMPUTER SKILLS						T8436. % RECRUITS WITH COMPUTER SKILLS					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-15	0	0	1	3	3	-10	0	0	1	2	2	-10	0	0	2	3	1
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS																		
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5207. ANTI-MIL PRESIDENT																		
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO																		
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK																		
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES																		
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	+10	+10	0	2	0	0							-20	-20	0	2	0	0
E7204. MILITARY PAY FREEZE	+15	+10	0	1	2	2							-10	-10	0	1	0	0
E7205. NO ENLISTMENT BONUS																		
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE																		
E7208. LID ON # MIL. RECRUIT.																		
E7210. TIME UPPED FOR RETIRE.																		
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT	+10	+10	0	1	0	0							-15	-15	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR	+6	0	0	1	2	2							-10	0	0	1	2	2
E7120. HI-1 WAR W/C-13	+10	0	0	2	2	3							-20	0	0	2	2	4

EVENTS	T8415. # OF RECRUITERS						T8419. EFFECTIVENESS OF AV. RECRUITER						T8405. $ PER NEW RECRUIT					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-15	0	0	1	3	3	+10	0	0	1	3	3	-20	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS													+10	+5	0	1	2	1
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT							-10	0	0	2	1	1	+5	0	0	2	1	1
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO							-10	0	0	1	1	0						
E5106. MEXICO → COM							+10	+5	0	2	1	5						
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK							-20	0	0	1	1	1						
E7107. STATE TERRORISM, U.S.							+10	+5	0	0	1	0						
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES							-10	-5	0	0	1	0						
E8202. ARMY @ MEX BORDER																		
E5203. NATL SVC FOR 18's	+10	5	0	2	4	1	-20	-10	0	1	2	0	+10	+5	0	1	2	5
E7204. MILITARY PAY FREEZE	+10	5	0	2	1	2	-20	-15	0	0	1	5	+10	+2	0	0	1	5
E7205. NO ENLISTMENT BONUS							-5	0	0	1	0	0	+5	0	0	1	0	0
E7209. PRE-ENROLLMENT RQD																		
E8203. ACF GONE							-50	-25	0	1	2	5	-15	-15	0	1	0	0
E7208. LID ON # MIL. RECRUIT.	-20	-20	0	2	0	0	+30	+20	0	2	0	5	-20	-15	0	2	0	5
E7210. TIME UPPED FOR RETIRE.	-10	-5	0	3	1	5	+10	+5	0	3	1	5	-10	-5	0	3	1	5
E7212. JOINT SVC ADS RQD							-20	-10	0	1	1	2	-5	0	0	2	0	0
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT	-25	-20	0	1	0	0	+20	+20	0	1	0	0	-30	-15	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR	+5	0	0	1	2	2	-20	0	0	1	3	1	+3	0	0	1	2	2
E7120. HI-1 WAR W/C-13	+10	0	0	2	3	2	-40	0	0	3	2	3	+15	0	0	2	2	3

EVENTS	T8439. DEP LOSS RATE						T 8437 % RECRUITS – ENG, 2 % CAVG						T 8414. WOMEN AS % OF REGULAR ARMY					
	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
E4101. DEPRESSION	-95	0	0	1	3	5	-15	0	0	1	3	3	+10	0	0	1	3	3
E6101. ENERGY CRISIS																		
E2201. RIOTS																		
E4202. CORP AID TIED TO JOBS	+10	+5	0	1	2	1												
E7109. 15 NUKE NATIONS																		
E5101. NATO STATE → COM																		
E7207. SDI ABANDONED																		
E5107. NUKE FREEZE																		
E5202. ANTI-MIL PRESIDENT	+5	0	0	2	1	1							-10	-2	0	2	1	1
E7103. U.S. TROOPS HOME																		
E7101. ARMS CONTROL DEMO	+10	+2	0	1	1	0							-5	-1	0	1	1	0
E5106. MEXICO → COM																		
E5105. PRC & USSR TIES																		
E7110. U.S. AT BRINK	+20	0	0	1	1	0							-15	0	0	1	1	0
E7107. STATE TERRORISM, U.S.																		
E7206. NUKE PLANT HIT																		
E8201. ARMY PROTECTS UTILITIES	+10	+5	0	1	1	0												
E8202. ARMY @ MEX BORDER	+5	0	0	2	0	5												
E5203. NATL SVC FOR 18's							+10	+5	0	2	3	5	+10	+5	0	2	3	5
E7204. MILITARY PAY FREEZE	+20	+15	0	1	1	1	+10	+10	0	1	0	0	+10	+2	0	1	0	3
E7205. NO ENLISTMENT BONUS	+10	0	0	1	1	2							+10	+2	0	1	1	2
E7209. PRE-ENROLLMENT RQD																		
E8208. ACF GONE	+15	+10	0	1	1	1							-15	-10	0	1	1	1
E7208. LID ON # MIL. RECRUIT.	+10	+1	0	1	1	3												
E7210. TIME UPPED FOR RETIRE.	-5	-5	0	1	0	0							-2	-2	0	1	0	0
E7212. JOINT SVC ADS RQD																		
E6103. MAJOR CIVIL DISASTER																		
E7202. RA DRAFT	-75	-75	0	1	0	0	+15	+15	0	1	0	0	-10	-10	0	1	0	0
E7113. U.S. LOSE POP L-1 WAR	+30	0	0	1	2	2							-10	0	0	1	2	2
E7120. H1-1 WAR W/C-13	+80	0	0	2	2	4							-30	0	0	2	2	5

Appendix F
Events and Trends Forecasted in This Study

Presented in the following pages is a complete listing, in serial order, of the events and trends that were included in both rounds of the Delphi forecasting effort. Page references to the first discussion of these items in the "most likely" ("ML") scenario are also provided. These page numbers refer to the page numbers within the scenario itself, not to the page numbers in this report.

Table F.1

Events Forecasted in the Delphi

Item	Description	Page in "ML"
Societal		
E2201.	Major riots by the poor occur in a number of large cities, causing many deaths and significant property damage.	11
Technological		
E3101.	A genetic engineering breakthrough provides an abundant, inexpensive food source.	25
E3102.	Biological technologies that improve short-term memory and facilitate rapid learning become commercially available.	14
E3103.	A cure for AIDS is developed.	10
Economic		
E4101.	A worldwide depression begins (i.e., unemployment reaches 15-20% in the advanced industrial nations).	3
E4102.	The U.S. uses its food-producing capabilities as a weapon to control the political, economic, or military policies of food-importing countries.	25
E4201.	The Federal Government achieves a balanced budget (Gramm-Rudman target date = 1991).	3
E4202.	Large private corporations establish lucrative college student financial aid packages with follow-on employment obligations.	15
Political		
E5101.	The Communist Party in a NATO country comes into power on the national level.	18
E5102.	The Communist Party in the U.S.S.R. is toppled from power by a massive popular uprising against the Soviet system.	15

Table F1 (continued)
Events Forecasted in the Delphi

Item	Description	Page in "ML"
E5103.	An Eastern European nation gains military and economic independence from the U.S.S.R. without incurring a Soviet attack.	17
E5104.	West Germany and East Germany are unified peacefully.	18
E5105.	The People's Republic of China (PRC) and the U.S.S.R. re-establish full economic and diplomatic ties.	22
E5106.	A pro-Soviet Communist government takes over in Mexico.	1
E5107.	A verifiable mutual freeze on nuclear weapons production and deployment is agreed upon by the U.S. and the U.S.S.R..	19
E5201.	An anti-military President takes office.	19
E5203.	Congress mandates at least two years of national service (either civilian or military) for all 18 year olds.	28
Environmental		
E6101.	The nation finds itself in an energy crisis at least as severe as the one in the mid-1970's.	1
E6102.	A fatal pandemic of unknown cause or cure erupts, sweeping North America, Europe, and Asia.	10
Military		
E7101.	Massive demonstrations for arms control arms reduction occur throughout the Western World.	20
E7102.	Turkey or Greece withdraws from the military and civil arms of NATO.	18
E7103.	Congress mandates withdrawal of a large number of troops from foreign soil (e.g., Europe, Korea, or Central America).	20
E7104.	Reserve components comprise the total U.S. commitment to NATO.	18

Table F1 (continued)
Events Forecasted in the Delphi

Item	Description	Page in "ML"
E7105.	The U.S. and the PRC sign a mutual defense treaty.	21
E7106.	Conclusive evidence is made public establishing that a country led by a fanatical anti-Western head of state has acquired at least one deliverable nuclear weapon.	25
E7107.	A "terrorist state" (e.g., Syria, Libya) initiates a program of indiscriminate, random attacks within the United States.	25
E7108.	A U.S. Army officer in the field initiates a successful unauthorized launch of a nuclear weapon against the U.S.S.R. (U.S. and U.S.S.R. are not in armed conflict).	23
E7109.	The number of nations known to possess nuclear weapons reaches at least 15.	17
E7110.	The U.S. is involved in an international confrontation at least as dangerous as the Cuban Missile Crisis in 1962.	23
E7111.	South Africa becomes involved in a regional non-nuclear conflict; the U.S. provides combat troops and material to help South Africa.	23
E7112.	The U.S. is involved in a popular low-intensity conflict--and quickly wins.	23
E7113.	The U.S. is involved in a popular low-intensity conflict--and slowly loses.	23
E7114.	The U.S. is involved in an unpopular low-intensity conflict--and quickly wins.	24
E7115.	The U.S. is involved in an unpopular low-intensity conflict--and slowly loses.	24
E7116.	The U.S. is involved in a high-intensity non-nuclear conflict--and quickly wins.	24
E7117.	The U.S. is involved in a high-intensity non-nuclear conflict--and slowly loses.	24

Table F1 (continued)
Events Forecasted in the Delphi

Item	Description	Page in "ML"
E7118.	A high-intensity non-nuclear military action breaks out in which the U.S. and the U.S.S.R. are in direct combat.	23
E7119.	The U.S. is involved in a high-intensity conflict in which tactical nuclear weapons are used.	24
E7120.	The U.S. is involved in a high-intensity conflict in which chemical or biological weapons are used.	12
E7121.	The Soviet Union and the U.S. engage in an all-out nuclear exchange.	23
E7201.	U.S. print and broadcast media mount a sustained and extensive anti-military campaign.	20
E7202.	Congress institutes a draft for the active component.	20
E7203.	Congress institutes a draft for the reserve component.	20
E7204.	Congress imposes a military wage freeze.	28
E7205.	The armed forces are required to eliminate enlistment bonus programs.	28
E7206.	Terrorists successfully attack a U.S. nuclear power plant, producing a massive release of radioactivity.	25
E7207.	The Strategic Defense Initiative is abandoned.	18
E7208.	Congress imposes a ceiling on the number of authorized recruiters.	31
E7209.	Educational incentives for recruits are linked with pre-enrollment at institutions of higher learning.	29

Table F1 (continued)
Events Forecasted in the Delphi

Item	Description	Page in "ML"
Army-Specific		
E8201.	The Army is assigned the mission of security of major public utilities and other essential facilities.	25
E8202.	The President directs Army troops to patrol the border between U.S. and Mexico.	27
E8203.	All restrictions on the duty assignments of women in the Army are removed.	30
E8204.	Congress authorizes the use of active duty Army forces to control riots in U.S.	26
E8205.	Selected highly specialized Army reserve units are mobilized.	22
E8206.	An accurate and unbiased (i.e., culture-free) measure of the potential of Army recruits is developed.	31
E8207	An effective and unbiased (i.e., culture-free) system for matching the abilities of Army recruits with Army requirements is developed.	31
E8208.	The Army drops its Army College Fund program; no substitute is provided.	29
E8209.	The Army implements a one-year tour option for the active component, plus a statutory USAR commitment.	30
E8210.	A program is enacted providing that Army College Fund and/or the New GI Bill educational benefits are transferred to family members after ten years of continuous service.	29
E8211.	Army ROTC programs are dropped by approximately 25% of participating universities.	29
E8212.	The Army becomes the service of first choice.	33
E8450.	USAREC is assigned responsibility for ARNG recruiting.	30

Table F2

Trends Forecasted in the Delphi

Item	Description	Page in "ML"
Demographic		
T1201.	Males aged 17-21 as a percentage of the population.	27
T1202.	Females aged 17-21 as a percentage of the population.	30
T1206.	Number of legal immigrants aged 17-21.	27
T1207.	Number of illegal immigrants aged 17-21.	27
T1208.	Number of "prime market" HSG aged 17-21 (i.e., both qualified and available) (1980 = 1.8 million; 1985 = 1.4 million).	28
T1209.	Families as a percentage of households (1960 = 85%; 1970 = 81%; 1980 = 74%; 1985 = 72%).	10
T1210.	Number of 13 year olds who are children of unmarried mothers (1965 = 155K; 1975 = 240K; 1985 = 394K).	11
T1211.	Percentage of families with children under 18 that are headed by a single parent (1970 = 13%; 1980 = 22%; 1984 = 26%).	10
T1212.	Births to mothers aged 19 or younger as a percentage of all births (1960 = 14%; 1975 = 19%; 1980 = 16%; 1983 = 14%).	9
T1213.	Births to mothers aged 30 and older as a percentage of all births (1960 = 27%; 1975 = 16%; 1980 = 20%; 1985 = 23%).	9
T1214.	Suicides per 100,000 males aged 15-24 (1978 = 20.0; 1980 = 20.2; 1981 = 19.7; 1982 = 19.8).	11
Societal		
T2201.	Overall quality of the public school system.	13
T2202.	Percentage of 17-21 year olds who are functionally or marginally illiterate.	14

Table F2 (continued)
Trends Forecasted in the Delphi

Item	Description	Page in "ML"
T2203.	Percentage of youth that never finish high school (1985 = 25%).	14
T2204.	Percentage of high school graduates who enter college shortly after graduation (e.g., in the following fall).	15
T2205.	Percentage of NPS college-age minority youth that enroll as freshmen in college.	15
T2206.	Aptitude of high school graduates to learn high-tech skills.	13
T2207.	Percentage of 17-21 year old Hispanics who are fluent in English.	14
T2208.	Percentage of 17-21 year olds who consider themselves Republicans (1980 = 18%; 1984 = 27%).	11
T2209.	Percentage of adults that say they accept traditional values on family, sex, woman's role, self-reliance, savings, and long-term gratification of needs (1980 = 25%).	10
T2210.	Level of public tolerance for diversity of life-styles, behavior, values, etc. in society.	10
T2211.	Percentage of persons aged 17-21 who are strongly patriotic.	12
T2212.	Emotional maturity of male 16 year olds--e.g., ability to set goals, postpone gratification, take responsibility for others	11
T2215.	Expenditures by private corporations on formal training programs for employees (1985 = $21 billion).	14
T2216.	Percentage of the population that thinks the overall situation in the U.S. 5 years hence will be better than it is now (1985 = 47%).	9

Table F2 (continued)
Trends Forecasted in the Delphi

Item	Description	Page in "ML"
T2217.	Percentage of U.S. high school seniors who say they believe that a nuclear war will occur in their lifetime (1984 = 38%).	19
T2218.	Percentage of Soviet high school seniors who say they believe that a nuclear war will occur in their lifetime (1984 = 12%).	19
T2219.	Percentage of the public that thinks children are better off with TV than without it (1960 = 70%; 1970 = 76%; 1980 = 62%).	14
T2220.	Level of public conviction that the strategic nuclear balance is stable.	19
T2221.	Level of public confidence in the ability of the armed forces to achieve their mission in combat.	20
T2222.	Level of public confidence in the ability of the Army to achieve its mission in combat.	20
T2223.	Level of influence of world peace movement organizations on U.S. public opinion.	20
T2224.	Level of the U.S. national will to support military defense operations.	19
Technological		
T3101.	Average annual percentage increase in the amount of scientific and technical knowledge (1986 = about 13% per year).	13
T3201.	Percentage of high school students receiving direct, hands-on training in the use of microcomputers (1982-83 = 13%).	13
Economic		
T4201.	Percentage annual real growth in GNP (1986 = about 3%).	3
T4202.	Annual rate of inflation, as measured by the year-to-year percentage change in the Consumer Price Index (1960 = 1.6%; 1970 = 5.9%; 1980 = 13.5%; 1984 = 4.3%).	3

Table F2 (continued)

Trends Forecasted in the Delphi

Item	Description	Page in "ML"
T4203.	Size of the Federal debt (1983 = $1.4 trillion).	3
T4204.	Size of the underground economy (1984 = about $350 billion).	3
T4205.	Percentage of women of child-bearing age in the labor force (1955 = 40%; 1985 = 70%).	9
T4206.	Percentage of married-couple families in which both husband and wife are in the paid labor force (1982 = 51%).	9
T4207.	Percentage of college graduates who are over-qualified for the jobs available to them upon graduation.	6
T4208.	Percentage of females entering the labor force in fields traditionally held by men (1986 = about 65%).	6
T4209.	Percentage of "information workers" in the civilian labor force, i.e., workers whose primary job is to produce, process, or transmit economically valuable data or information (1970 = 45%; 1980 = about 50%).	6
T4216.	Percentage of the population that is in the labor force (1970 = 60.4%; 1980 = 63.8%; 1984 = 64.4%).	5
T4217.	Percentage of unemployment in the civilian labor force (1970 = 4.8%; 1980 = 7.0%; 1984 = 7.4%).	5
T4218.	Unemployment rate in the civilian labor force for 17-21 year olds.	5
T4219.	Unemployment rate in the civilian labor force for Hispanics aged 17-21.	5
T4220.	Unemployment rate in the civilian labor force for blacks aged 17-21.	5

Table F2 (continued)
Trends Forecasted in the Delphi

Item	Description	Page in "ML"
T4221.	Percentage of the civilian labor force in the industrial/manufacturing sector (1985 = about 20%).	6
T4222.	Percentage of new jobs requiring computer skills.	6
T4223.	Median income of householders aged 15-24 (1983 = $13,402).	6
T4224.	Percentage of the population with an intermediate income--i.e., "middle class" (1978 = 55%; 1983 = 42%).	9
T4225.	Percentage of families below the poverty level (1960 = 18.1%; 1970 = 10.1%; 1980 = 10.3%; 1984 = 11.6%).	11
T4226.	Percentage of children under 16 living in families below the poverty level (1984 = 22%).	11
Political		
T5201.	Level of congressional support for the military.	20
T5202.	Collective political clout of persons over 65 on the national level.	12
Military		
T7101.	Soviet military strength (i.e., capability) in conventional land combat.	18
T7102.	Level of Soviet power projection in Third World countries.	18
T7103.	Stability of the strategic nuclear balance (0-10, where "0" = collapse of deterrence" and "10" = "total deterrence").	18
T7104.	Perception of the stability of the strategic nuclear balance by the nomenclatura (i.e., the ruling elite) in the U.S.S.R..	18
T7105.	Level of antagonism between Warsaw Pact and NATO forces.	17

Table F2 (continued)
Trends Forecasted in the Delphi

Item	Description	Page in "ML"
T7106.	Level of antagonism between the United States and the U.S.S.R.	18
T7107.	Level of antagonism between the United States and the PRC.	21
T7108.	Level of antagonism between Israel and other Middle Eastern states.	21
T7109.	Level of antagonism between Pakistan and India.	22
T7110.	Level of antagonism between North and South Korea.	21
T7111.	Level of antagonism between Nicaragua and its Central American neighbors.	21
T7112.	Level of antagonism between the PRC and the Chinese government on Taiwan.	2
T7113.	Level of antagonism between South Africa and other nations in Africa.	22
T7114.	Level of antagonism among the Middle Eastern states other than Israel (e.g., Iran and Iraq).	21
T7115.	Level of antagonism between the U.S.S.R. and the PRC.	22
T7116.	Level of antagonism between the PRC and India.	22
T7117.	Level of antagonism between major nations in South America.	22
T7201.	Number of incidents of international terrorism affecting U.S. citizens (1985 = about 200).	5
T7202.	Defense expenditures as a percentage of GNP (1960 = 9.7%; 1970 = 8.4%; 1980 = 5.2%; 1984 = 6.7%).	20

Table F2 (continued)

Trends Forecasted in the Delphi

Item	Description	Page in "ML"
T7203.	Percentage of the male population that has served in the military.	25
T7204.	Percentage of the male population that has actually been in military combat.	25
7205.	Average AFQT score of recruits in services other than the Army.	30
Army-Specific		
T8401.	Size of the Army budget (in constant FY87 dollars, FY81 = $55.6 billion; FY86 = $77.5 billion).	27
T8402.	Army recruiting expenditures as a percentage of the Army budget.	27
T8403.	Army advertising expenditures as a percentage of the Army recruiting budget.	27
T8404.	Overall effectiveness of Army recruitment advertising.	27
T8405.	Recruiting expenditures per new Army recruit (1986 = about $4,000).	33
T8406.	E-1 basic pay as a percentage of civilian pay (using the Employment Cost Index, 1980 = 92.7%; 1984 = 94.2%)	28
T8407.	Level of Army esprit de corps.	20
T8408.	Level of modernization of the Army's primary mobility and firepower weapon systems.	20
T8409.	Percentage of Army enlisted positions requiring computer literacy.	31
T8410.	National Guard military personnel as a percentage of Active Army troops (FY72 = 48%; FY80 = 47%; FY82 = 52%; FY84 = 56%; FY86 = 58%).	30
T8411.	Hispanics as a percentage of the Active Army.	33

Table F2 (continued)
Trends Forecasted in the Delphi

Item	Description	Page in "ML"
T8412.	Blacks as a percentage of the Active Army.	33
T8413.	Asian-Americans as a percentage of the Active Army.	33
T8414.	Women as a percentage of the Active Army.	33-34
T8415.	Number of regular Army military recruiters (1985 = about 5050; 1986 = about 5140, foxhole strength).	31
T8422.	Value of the Army's educational benefits program as an inducement to enlist.	28
T8423.	Recruiting contract mission for the regular Army (1985 = 134K).	27
T8424.	Intensity of competition from the private sector for high school graduates.	29
T8425.	Intensity of competition from the private sector for college graduates.	29
T8426.	Intensity of competition from the other services to recruit high school graduates.	29
T8427.	Intensity of competition from the other services to recruit college graduates.	29
T8428.	Propensity to enlist in the Army (males only).	30
T8429.	Propensity to enlist in the Army (females only).	30
T8430.	Median age of NPS Army recruits (1974 = 18.8; 1979 = 19.1; 1982 = 19.7).	30
T8431.	Percentage of NPS Army recruits over the age of 21	30
T8432.	Average AFQT score of Army recruits (1980 = 45.9; 1984 = 51.3).	30

Table F2 (continued)

Trends Forecasted in the Delphi

Item	Description	Page in "ML"
T8433.	Average AFQT score of Army recruits in TSC I, II, and IIIA.	31
T8434.	Percentage of Army recruits who are high school graduates (1981 = 80%; 1985 = 91%).	30
T8435.	Percentage of Army recruits who are deficient in basic educational skills.	31
T8436.	Percentage of Army recruits who are computer literate.	30
T8437.	Percentage of Army recruits for whom English is a second language.	33
T8438.	Compatibility of the value set of NPS recruits with Army values.	12
T8439.	DEP loss rate (GSMA) (1985 = 5.9%).	33